



## Final Project Document

<b>Project number:</b>	190370
<b>Project title:</b>	Structuring of an International Network of Solar Technology and Application Resource Centres
<b>Thematic area code</b>	IC32 (Clean Energy Access)
<b>Starting date:</b>	July 2022 (upon receipt of funding)
<b>Duration:</b>	The first operational phase of the STAR C will be 30 months. The seed funding to be provided by the Government of France to the project will cover a period of 30 months (conservative scenario). ISA, UNIDO and their partners will aim to mobilise further funding during project implementation to cover additional 30 months (optimistic scenario). The UNIDO project duration will be for 60 months considering the conservative and optimistic scenario.
<b>Project site:</b>	Global project covering particularly least developed countries (LDCs) in African countries and Small Island Developing States (SIDS)
<b>Executing agencies:</b>	UNIDO and the International Solar Alliance (ISA) in close cooperation with the centres of the Global Network of Regional Sustainable Energy Centres (GN-SEC) <sup>1</sup>
<b>Counterparts for Execution:</b>	The main counterparts are ISA and the members of the Global Network of Regional Sustainable Energy Centres (GN-SEC). Within the conservative budget scenario, the main counterparts will be ECREEE (ECOWAS), EACREEE (EAC) and PCREEE (SPC), the respective Ministries of Energy, as well as the National Focal Points (NFPs) of the International Solar Alliance (ISA) and the GN-SEC centres. The geographic scope of the project will be expanded depending on potential additional funding mobilized. Currently, discussions with various donors are ongoing.
<b>Project inputs:</b>	UNIDO project budget: EUR 555,556 from the Government of France through ISA (excl. support costs) <sup>2</sup>
<b>Government of France through UNIDO:</b>	UNIDO support costs (8%): EUR 44,444. Total UNIDO grant: EUR 600,000
<b>Government of France through ISA:</b>	Contribution of ISA provided through the Government of France: EUR 400,000
<b>Funding to be mobilized:</b>	For the optimistic budget scenario, another EUR 2,775,000 will be mobilised from other donors during project implementation (e.g. EU, IFIs).
<b>Grand Total:</b>	EUR 3,775,000

<sup>1</sup> Particularly with EACREEE, ECREEE and PCREEE during the conservative scenario

<sup>2</sup> The provided ISA grant to UNIDO is flexible and will allow shifts between budget lines within the four outcome areas without approval of the donor up to a threshold of 10% (please note that outcomes are defined as outputs in the UNIDO SAP budget system). Budget shifts between outcome areas require approval by the donor. In line with the UNIDO cost-recovery policy, another Euro 24,583 was included for technical services under budget line 11.01 in the project budget. No UN levy is charged. To allow UNIDO to kick-start the project activities, an upfront payment of at least 70% shall be provided to UNIDO at the beginning.

**Project Summary:**

The present project document operationalizes the collaboration between the International Solar Alliance (ISA) and the United Nations Industrial Development Organisation (UNIDO) to establish the International Network of Solar Technology Application and Resource Centres (STAR-C).

The lack of qualification and certification is a major barrier for solar market uptake and related entrepreneurial activities in Africa and SIDS. The STAR C network will contribute to increased access of ISA Member States to quality solar products and services for inclusive and sustainable development, particularly in least developed countries (LDCs) and small island developing states (SIDS) of the Indo-pacific.

The initiative will have a positive impact on market uptake and strengthen quality infrastructure and standards for PV and solar thermal products and services, through the creation and reinforcement of local capacities in technological areas to provide certified solar curricula and training, as well as the strengthening of solar networks and knowledge management. The four key outcomes of this project involve: (i) Improved quality and certification frameworks for PV and solar thermal products and services; (ii) Enhanced capacities of institutions to offer certified quality solar curricula and training; (iii) Increased impact of solar networks and knowledge management systems; (iv) Effective STAR-C management and governance structure established and sustained.

Seed financial support (1M euros) was provided by the Government of France, additional funding is expected to be leveraged from other donors to reach sustainability and operate beyond the initial project duration. To have accelerated impact, the project takes into account both national and regional approaches, and is implemented within the scope of the Global Network of Regional Sustainable Energy Centres (GN-SEC), coordinated by UNIDO in partnership with the regional economic communities (RECs). This will allow south-south and triangular cooperation on solar energy issues. With this project, ISA and UNIDO contribute particularly to the achievement of SDG-7, SDG-8, SDG-9 and SDG-13, and to the implementation of the Agenda 2063: "The Africa We Want" and the SAMOA Pathway.

**Approved:**

**Signature:**

**Date:**

**Name and title:**

**On behalf of the  
International Solar  
Alliance:**

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**On behalf of  
UNIDO:**

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## Table of Content

Table of Content .....	3
Abbreviations .....	5
List of tables .....	6
List of figures .....	6
A. Introduction .....	7
A.1 Background .....	7
A.2 Context: Challenges for the uptake of solar energy markets in Africa and SIDS.....	7
A.2.1 Lack of quality and certification frameworks for solar products and services.....	8
A.2.2 Insufficient local capacities for market uptake through certified curricula .....	9
A.2.3 Lack of sustainable partnerships and performance .....	9
A.3 Targeted Beneficiaries .....	10
A.3.1 Direct beneficiaries.....	10
A.3.2 Indirect beneficiaries .....	11
B. The STAR C Project.....	12
B.1 Development objective and outcomes.....	12
B.2 Intervention logic and theory of change .....	13
B.3 Project Outputs and Main Activities.....	14
B.3.1 Outcome 1: Improved quality and certification frameworks for PV and solar thermal products and services .....	15
B.3.2 Outcome 2: Enhanced capacities of institutions to offer certified quality solar curricula and training.....	16
B.3.3 Outcome 3: Increased impact of solar networks and knowledge management systems.....	19
B.3.4 Outcome 4: Effective STAR-C management and governance structure established and sustained.....	21
B.4 Indicative Workplan.....	22
B.5 Cross Cutting Priorities .....	22
B.5.1 Gender Mainstreaming.....	22
B.5.2 Environmental and Social Safeguards .....	24
B.5.3 Alignment with SDGs .....	24
B.6 Sustainability.....	25
B.7 Risks .....	26
C. Project Inputs.....	28
C.1 Joint ISA UNIDO Approach .....	28

C.2 Guiding Principles .....	28
C.3 ISA Project Inputs.....	29
C.4 UNIDO Project Inputs.....	29
C.5 Counterpart inputs.....	31
C.5.1 National Focal Points .....	31
C.5.2 STAR C Network Members.....	31
D. Coordination, Monitoring, and Reporting.....	32
D.1: Project Coordination and Management.....	32
D.1.1 Legal status .....	32
D.1.2 Institutional Structure of the STAR C Project .....	33
D.2 Project Monitoring and Evaluation.....	37
D.3 Project Reporting.....	38
E. Budget.....	38
E.1 Financial planning .....	38
E.2 Financial flows.....	39
E.3 Project budget.....	40
F. Prior Obligations and Prerequisites .....	43
G. Legal Context .....	43
Annex 1: Joint Declaration UNIDO – ISA.....	44
Annex 2: Letters of Exchange UNIDO – ISA.....	46
Annex 3: Letter – Second Assembly of the International Solar Alliance.....	49
Annex 4: Summary Stakeholders Consultation Meeting .....	51
Annex 5: Trust Fund Agreement ISA – UNIDO. Preparatory assistance .....	52
Annex 6: Trust Fund Agreement ISA – Government of France.....	56
Annex 7: Origin of the Project.....	62
Annex 8: Justification for the Assistance by ISA and UNIDO .....	63
Annex 9: Context of the solar energy in African countries and SIDS.....	66
Annex 10: Logical Framework .....	70
Annex 11: Solar technologies curricula and the modules under thematic clusters .....	84
Annex 12: Indicative work plan.....	86
Annex 13: Detailed project budget.....	91



## Abbreviations

<b>CO<sub>2</sub></b>	Carbon Dioxide
<b>COP</b>	Conference of Parties
<b>CST</b>	Concentrating Solar Thermal
<b>CS(T)P</b>	Concentrating Solar (Thermal) Power
<b>CTCN</b>	Climate Technology Centre and Network
<b>EACREEE</b>	East African Centre for Renewable Energy and Energy Efficiency
<b>ECREEE</b>	ECOWAS Centre for Renewable Energy and Energy Efficiency
<b>ESSPP</b>	Environmental and Social Safeguards Policies and Procedures
<b>GCF</b>	Green Climate Fund
<b>GDP</b>	Gross Domestic Product
<b>GEF</b>	Global Environment Facility
<b>GHG</b>	Green House Gas
<b>GN SEC</b>	Global Network – Sustainable Energy Centres
<b>IEA</b>	International Energy Agency
<b>IPP</b>	Independent Power Producer
<b>IRENA</b>	International Renewable Energy Agency
<b>ISA</b>	International Solar Alliance
<b>ISID</b>	Inclusive and Sustainable Industrial Development
<b>STAR C</b>	international Solar Technology and Application Resource Centre
<b>MNRE</b>	Ministry of New and Renewable Energy (Government of India)
<b>NFP</b>	National Focal Point
<b>PCREEE</b>	Pacific Centre for Renewable Energy and Energy Efficiency
<b>PFAN</b>	Private Financing Advisory Network
<b>PPA</b>	Power Purchase Agreement
<b>PV</b>	Photo Voltaic
<b>RTS</b>	Roof Top Solar
<b>SDG(s)</b>	Sustainable Development Goal(s)
<b>SE4All</b>	Sustainable Energy for All
<b>SHC</b>	Solar Heating and Cooling
<b>SHS</b>	Solar Home System
<b>SIDS</b>	Small Island Developing States
<b>UNEP</b>	United Nations Environment Programme
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>UNIDO</b>	United Nations Industrial Development Organization
<b>WB(G)</b>	World Bank (Group)

## List of tables

Table 1: Key activities under output 1.1 and output 1.2 .....	15
Table 2: Key activities under output 1.3 (Regional Framework and Capacity).....	16
Table 3: Key activities under output 2.1 (Solar curricula regional assessment and implementation framework) .....	17
Table 4: Key activities under output 2.2 (Capacity Building) .....	18
Table 5: Key activities under output 2.3 (Certified Training).....	19
Table 6: Key activities under output 3.1 (Regional Solar Networks) .....	20
Table 7: Key activities under output 3.2 (Partnership).....	20
Table 8: Key activities under output 3.3 (Dissemination).....	21
Table 9: Key activities under output 4.1 and output 4.2 .....	21
Table 10: Key activities under output 4.3 (Monitoring and reporting) .....	22
Table 11: Mainstreaming activities.....	23
Table 12: Sustainability dimensions and actions for STAR C project.....	26
Table 13: Risk assessment and mitigation measures for STAR C project .....	26
Table 14: Summary of project inputs to be supplied through UNIDO for implementation of the Project .....	30
Table 15: Project budget per outcome for conservative (2.5 years) of UNIDO – Budget to be reported by UNIDO .....	40
Table 16: Project budget for conservative (2.5 years) of UNIDO - Budget to be reported by UNIDO ..	41
Table 17: Project budget for conservative (2.5 years) of ISA (not operated by UNIDO).....	42
Table 18: Project budget for conservative (2.5 years) and optimistic scenario (5 years) .....	42
Table 19: Baseline Projects .....	68
Table 20: Logical Framework .....	70
Table 21: Solar technologies curricula and the modules under thematic clusters.....	84
Table 22: Detailed project budget .....	91

## List of figures

Figure 1: Demand and supply-side barriers for solar energy product and service markets.....	8
Figure 2: Regional-national STAR C approach.....	10
Figure 3: Entity diagram of main and indirect beneficiaries of STAR C within the scope areas .....	12
Figure 4: Theory of Change .....	14
Figure 5: STAR C project institutional structure.....	34

## A. Introduction

### A.1 Background

The present project document “Structuring of an International Network of Solar Technology and Application Resource Centres” (STAR C) was formulated between the Government of France, ISA and UNIDO to facilitate of south-south and triangular solar cooperation within the Global Network of Sustainable Energy Centres (GN-SEC). Further information on the origin of the cooperation is detailed from Annex 1 to 7.

### A.2 Context: Challenges for the uptake of solar energy markets in Africa and SIDS

Globally, the growth of solar energy markets is largely driven by PV. The price of PV panels has dropped significantly in recent years which allowed for solar energy to be the ‘cheapest electricity in history’<sup>3</sup>. The market is dominated by utility-scale grid-connected solar parks and distributed solar rooftop systems in a few leading countries (70% of installed PV capacity is concentrated in 5 countries – China, USA, Japan, Germany and India). Most of the industrialised and emerging countries have adopted a broad range of policies, fiscal and non-fiscal incentives to promote the use and supply of solar energy products and services. Moreover, they are leading manufacturers and exporters of solar products and services. Most of them have access to a well-established solar energy quality infrastructure and qualification and certification resources. This includes specialised clean-tech clusters, which allow close cooperation between the solar industry and applied research institutions.

Beyond these established markets the widespread solarisation of energy systems and attached value chains are still in infancy. Particularly, the dissemination of SHC (solar heating and cooling) and CSP (concentrating solar power) solutions requires major support efforts. In developing countries, particularly in LDCs such as African countries and SIDS<sup>4</sup>, the uptake of solar energy product and service markets face manifold supply-side and demand-side barriers related to policy and regulation, finance, institutional capacities, business models, knowledge and awareness, local entrepreneurship and innovation, as well as quality infrastructure and minimum quality standards for products and services. Therefore, the STAR C project focuses on the latter two issues to *pave the way for the development of the market in order to pull and push actions directed to overcome demand (consumers of products and services) and supply-side (suppliers of products and services) barriers*. See Figure 1<sup>5</sup>:

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<sup>3</sup> IEA (2020), World Energy Outlook 2020, IEA, Paris <https://www.iea.org/reports/world-energy-outlook-2020>

<sup>4</sup> The description of the solar energy context in African countries and SIDS can be revised in Annex 9.

<sup>5</sup> Findings of UNIDO based on project experiences in LDCs and SIDS



**Figure 1: Demand and supply-side barriers for solar energy product and service markets**

Therefore, a comprehensive approach that speeds up market progress is required, which puts balanced emphasis on creating demand and supply for clean energy products and services and well as, the creation of local capacities for fostering the development of solar sector. This also states the need to counting on comprehensive and regulated trainings through well-established institutions on capacity building, e.g., universities, and the establishment of partnerships for long term agreements to spur exchange of experiences and knowledge sharing. In summary, technological learning requires the development of human resources accompanied to the removal of trade drawbacks, provision of intellectual rights and other forms of technical assistance.

In support of urban and rural industrialisation and climate aspirations, African governments and SIDS in partnership with international partners, such as ISA and UNIDO, aim to accelerate the deployment of solar energy solutions through the STAR C project to address the following specific barriers:

- Lack of quality and certification frameworks for products and services on solar technologies
- Insufficient local capacities for market uptake through certified curricula
- Lack of sustainable partnerships and performance

#### A.2.1 Lack of quality and certification frameworks for solar products and services

The STAR C project is addressing the described demand-side and supply (ier)-side barriers related to quality infrastructure and standards for solar products and services. Quality infrastructure is an important enabler throughout all solar technology types and a key requirement for consumer demand and confidence, as well as the strengthening of local solar businesses and providers of solar products and services. For instance, in the off-grid sector, the lack of an appropriate application of technical standards increases costs and reduces the quality of Solar Home Systems (SHSs), which also affects the confidence of users and local parties on the projects. The replacement of batteries, usually the weak component of SHSs, could increase costs by 40% and reduce the reliability of electricity service. Therefore, capacity building programs on technical quality of PV systems could contribute to the deployment of solar markets. Associated standards to this issue are the IEC 62257 series: “Recommendations for Renewable Energy and Hybrid Systems for Rural Electrification”. In this line, the Lighting Global Program (2010), promoted by the World Bank, is supporting the off-grid market to

ensure the affordability and availability of SHSs. However, there are still some challenges about certification process complexity and costs; furthermore, there are only two accredited laboratories (Schatz Energy and Research Centre (SERC) and China' SMQ Lab) to certify SHSs globally<sup>6</sup>.

#### A.2.2 Insufficient local capacities for market uptake through certified curricula

In African countries and SIDS, there is a lack of well-equipped institutions and quality programs with a long-term view for offering permanent trainings. Moreover, international concessional development and climate aid is mainly focused financing installations rather than long-term capacity building for covering demand and supply dimensions and technological certification. In addition, most of the enabling international support is focused on creating demand for renewable energy products and services and not on creating domestic business and entrepreneurial capacities for the supply. African countries and SIDS will not achieve their sustainable energy targets as projected in the Intended Nationally Determined Contributions (INDCs). Furthermore, the situation questions the inclusiveness of the energy and climate transition as the participation of local businesses in the value chains of solar manufacturing and servicing remains very low or disadvantaged in comparison to international providers.

#### A.2.3 Lack of sustainable partnerships and performance

The establishment of partnerships among different organizations, such as international, regional and local as considered as the most suitable alternative to assisting in sustainable energy deployment by bringing together complimentary skills and knowledge, but they are usually affected by power imbalances and partners limiting its performance. In light of this, partnership structures require a well-defined approach and division of labour to guarantee the delivery of effective outcomes, utilizing participatory means for projects appropriation and knowledge transfer. Therefore, STAR C project is also considering the establishment and reinforcement of partnerships with key institutions to be benefited and to contribute to project implementation in a transparent and effective manner, also harnessing the wide experience of the GN-SEC with a regional perspective.

Based on previous statements, it was agreed that STAR C will focus on the following outcomes:

1. Improved quality and certification frameworks for PV and solar thermal products and services
2. Enhanced capacities of institutions to offer certified quality solar curricula and training
3. Increased impact of solar networks and knowledge management systems
4. Effective STAR-C management and governance structure established and sustained

*To have accelerated impact a combined regional-national approach will be applied by creating synergies to the Global Network of Regional Sustainable Energy Centres (GN-SEC) (<https://www.gn-sec.net/>) program coordinated by UNIDO in partnership with the regional economic communities. Some of the barriers for solar energy product and service markets in developing countries can be addressed more effectively and at lower cost at regional level, as well as the strengthening of qualification and certification capacities. Common testing and certification procedures can lead to cost reductions, and harmonised regional solar equipment and service standards can avoid duplication of efforts and create economies of scales. Regional networks and hubs for solar qualification and certification allow common use of educational infrastructure within the respective region. See Figure 2:*

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<sup>6</sup> Eras-Almeida, A.A.; Fernández, M.; Eisman, J.; Martín, J.G.; Caamaño, E.; Egado-Aguilera, M.A. Lessons Learned from Rural Electrification Experiences with Third Generation Solar Home Systems in Latin America: Case Studies in Peru ., Sustainability 2019, 11, doi:<https://doi.org/10.3390/su11247139>.



**Figure 2: Regional-national STAR C approach**

It shall be noted that the mentioned GN-SEC has been already deeply involved in solar related activities in the past. This is particularly true for ECREEE and RCREEE, which have implemented various regional programs in this context. There is also Capacity Building Programme on Sustainable Energy Solutions for Islands (<https://training.gn-sec.net/>), which has been conceived to support the regional Sustainable energy centres in the implementation of a qualified training to respond to the urgent need for affordable training and certification programs on sustainable energy for islands facing the challenge of 100% renewable energy. The program consists of nine online modules which describe and analyse, using a deep and technical approach, the following technologies and energy issues: Solar Photovoltaics, Solar Thermal, Thermal Optimization in buildings, Mini-grids and others.

### A.3 Targeted Beneficiaries

The STAR C project will serve the following direct beneficiaries involved in the processes of PV and SHC quality infrastructure, qualification and certification. CSP will be considered but not in an extensive analysis and approach.

Initially, the project will focus on countries covered by the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)<sup>7</sup>, the East African Centre for Renewable Energy and Energy Efficiency (EACREEE)<sup>8</sup> and the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE)<sup>9</sup>. In case further funding can be mobilised during project implementation, the support will be extended to other GN-SEC regions (e.g. SACREEE, RCREEE, CCREEE, REEECH, CEREEAC, CECECO).

#### A.3.1 Direct beneficiaries

- *Governments, public institutions and decision-makers* in ISA Member States involved in national solar quality, qualification and certification processes. This includes actors involved in processes related to rural decentralized solar solutions.

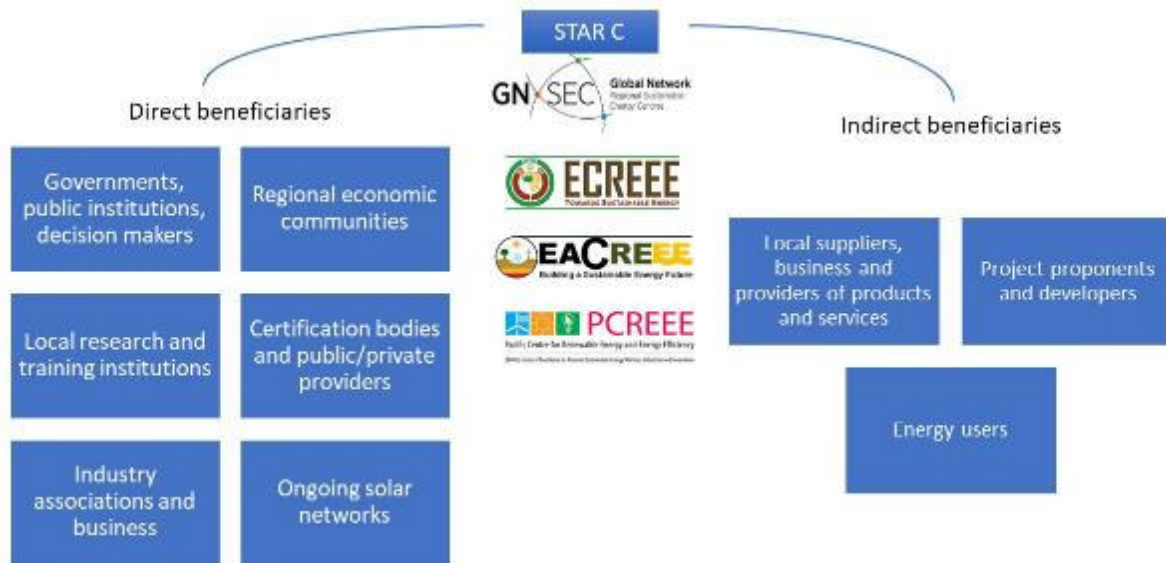
- *Regional economic communities (RECs) and their specialized energy institutions*, including the GN-SEC centres, involved in regional solar quality infrastructure, qualification and certification processes
- *Local research and training institutions, as well as private trainers* involved in solar qualification and certification – national and regional universities, vocational centres, technical schools.
- *Certification bodies and public/private providers of solar product and service certification* - the national and institutions of ISA developing countries and GN-SEC regions to create local capacity and expertise on quality frameworks and equip the facilities to provide certification service on products (panels, collectors, inverters, batteries, lanterns, solar kits, controllers, etc.) and services (for design, engineering, installation, operation and maintenance).
- *Private solar industry associations and businesses* involved in solar product certification and capacity building
- *Ongoing solar networks and initiatives* focused on solar market creation, quality infrastructure and capacity building

#### A.3.2 Indirect beneficiaries

- *Local suppliers, businesses and providers of products and services along the solar value chain* – providers of solar technology equipment and requisite services (planning and development, engineering, procurement, operations, maintenance, etc.) will benefit from improved and more reliable quality frameworks, staff training and qualification opportunities.
- *Project proponents* and developers – understood as the organisations (domestic or international private sector, government, etc.) that are prepared to take a – calculated – risk to establish and operate solar energy project(s) in ISA developing countries and GN-SEC regions involved in the project, that will benefit from STAR C contributions to improved quality frameworks, human and institutional capacities; this includes also traditional utilities, as well as independent power producers (IPPs).
- *Energy Users* – urban and rural energy users (households, businesses and industry) benefitting improved quality products and higher from solar energy services specifically in ISA developing countries and GN-SEC regions involved in the project.

To service these beneficiaries, STAR C works in partnership knowledge-based institutions and development partners, individually as well as collectively through their respective networks. See Figure 3:





**Figure 3: Entity diagram of main and indirect beneficiaries of STAR C within the scope areas**

## B. The STAR C Project

### B.1 Development objective and outcomes

Recognizing the urgent need to support developing country ISA members with high potential for solar technology deployment, the ISA Assembly agreed to establish an international network of STAR C. The STAR C work towards enhancing capacity for deployment of solar energy applications and research, development, innovation, standardization and testing in solar energy to contribute to the reduction in greenhouse gas emissions through increased access to modern, reliable and affordable energy.

The overarching objective of the STAR C initiative is to provide solar technology and application resourcing services to Member Countries so that these countries can achieve the ISA’s vision of scaled up and accelerated large scale deployment of solar energy to meet the respective countries’ priority energy access, energy transformation and energy security needs through:

- Creating and reinforcing ecosystems for solar energy deployment at national and regional level: Develop technical facilities that can build up, trial and demonstrate replicable solar energy applications most relevant to the country and – as appropriate – assist with testing and/or standardization.
- Training and skills development: connecting more and better qualified solar professionals to support solar deployment in the Small Development Islands and African countries.
- Implementing a global network of knowledge and expertise being utilized for solar energy deployment in ISA Members especially the Small Development Islands and African countries, with support of the GN-SEC, fostering North-South, South-South and tripartite cooperation for solar energy capacity building and deployment.

Therefore, **the development objective of ISA-UNIDO STAR C project is to enhance institutional, technical and networking capacity of member countries for accelerated deployment of certified solar energy thereby ensuring energy security.**



The project has the following outcomes:

- **Outcome 1: Improved quality and certification frameworks for PV and solar thermal products and services**
  - *This outcome, through the assessment of qualification and certification barriers hindering the uptake of solar products and services at the regional level, aims at setting the foundations for solar regional quality framework and certification and quality infrastructure.*
- **Outcome 2: Enhanced capacities of institutions to offer certified quality solar curricula and training**
  - *This outcome aims at developing comprehensive curricula on solar technologies and their applications and capacitating various institutions with a solid academic structure (universities, vocational training centres, etc.) to adapt and implement solar curricula in pilot developing ISA countries and GN-SEC regions for an improved knowledge and scaled-up deployment of photovoltaic and solar thermal technologies.*
- **Outcome 3: Increased impact of solar networks and knowledge management systems:**
  - *The project brings existing capacities and institutions together in a solar deployment ecosystem and works towards improving its functioning and overcoming the shortfalls that currently exist in such ecosystems, starting by reinforcing partnerships and bringing new solar stakeholders with key contributions in solar sector for knowledge transfer and exchange of experiences. National ecosystems benefit from regional coordination and integration.*
- **Outcome 4: Effective STAR-C management and governance structure established and sustained**
  - *This outcome aims at establishing an effective implementation and governance structure for the STAR C. It will develop a business and financing model, which will allow STAR C to operate beyond the project duration.*

These four outcomes and subsequent outputs and activities mainstream gender and youth equality measures. The project will promote gender- and youth-responsive qualification and certification framework. Further information regarding the specific outputs of the project is available through the next sections and in the detailed results framework (Annex 10).

## B.2 Intervention logic and theory of change

As described in previous chapters, the main challenges for the STAR C countries to benefit from photovoltaic and solar thermal (with special focus on Solar Heat for Industrial Processes (SHIP)) products and services include the limited local knowledge, the inexistence of qualification and certification frameworks and bodies to ensure quality compliance, the weak capabilities and ecosystems to support the deployment of solar technologies, and the lack of standards to ensure quality of products and services. The project through its activities will address these challenges, targeting primarily universities and training and certification institutions in selected ISA developing countries and GN-SEC regions in the project. The project will support an increase capacity of ISA developing countries and GN-SEC centres to implement regional qualification and certification frameworks, stimulating knowledge ecosystems and partnerships for an accelerated solar deployment across developing ISA country members. Academic partnership will sustain and scale up the process across the GN-SEC regions. The below Theory of Change (Figure 4) provides the overall rationale on how the STAR C project will address the identified barriers that are hindering the market uptake in the three selected GN-SEC regions.

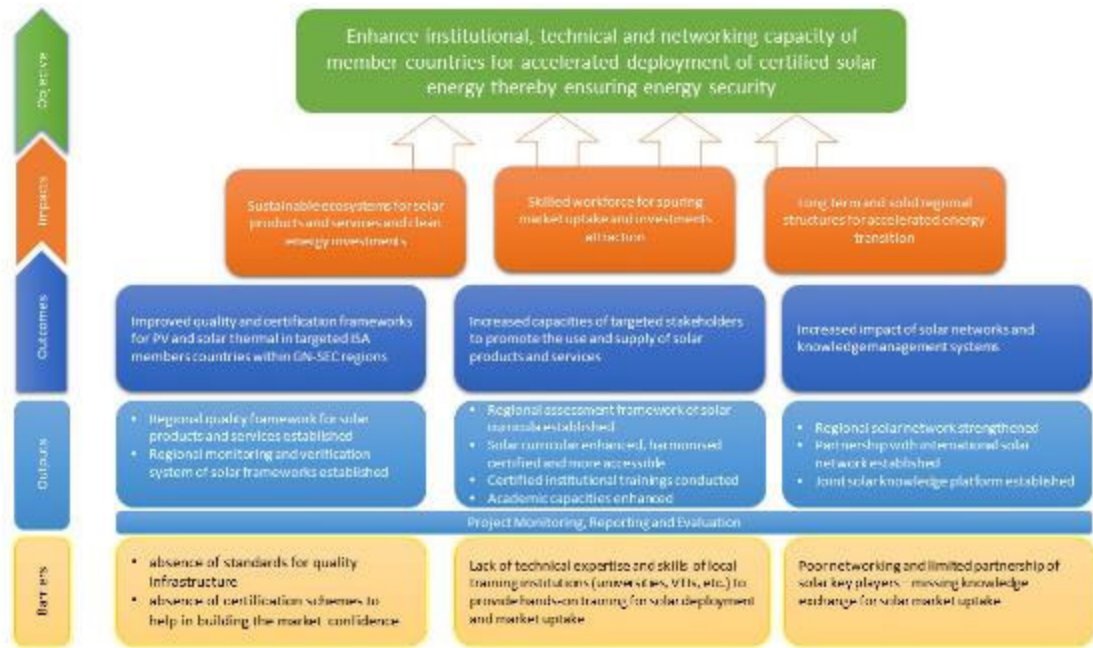


Figure 4: Theory of Change

### B.3 Project Outputs and Main Activities

Primarily targeting universities and training and certification institutions in selected ISA developing country members and GN-SEC regions, the project will contribute to the deployment of quality PV and solar thermal products and services through the below outlined outputs and activities. The project scope will focus on setting regional quality framework for photovoltaic and solar thermal products and related services in compliance with international standards for quality infrastructure. Moreover, major emphasis will lie on strengthening regional/national qualification and certification frameworks and the impact of solar networks. Through the GN-SEC the project will facilitate south-south and triangular cooperation on quality infrastructure and qualification and certification issues. The activity level details will only be confirmed through the annual work planning and budgeting process which will reflect experiences gained and lessons learned, specific requests received from ISA Member States and the GN-SEC centres, and available funding and other resources.

In the same line, it is worthy to indicate that the project has been designed to cover two phases:

- Conservative scenario with a duration of 2.5 years, funded by the Government of France (1M euros)
- Optimistic scenario with additional 2.5 years to be achieved once the project, during the conservative phase, secures additional resources from other donors. This scenario would also reinforce the extension of several activities. The included key performance indicators (KPIs) and targets in the results framework refer to the envisaged results of the conservative scenario. Additional funding would require and update of the KPIs.

Additionally, the results framework for the project including the KPIs is further summarized in the logical framework, contained in Annex 10 to this project document.

### B.3.1 Outcome 1: Improved quality and certification frameworks for PV and solar thermal products and services

Divided in three interlinked outputs, outcome 1 aims at setting the foundation for a regional quality and certification framework for solar products and services in ISA developing countries and GN-SEC regions. Quality infrastructure is an important enabler throughout all solar technology types and a key requirement for consumer demand and confidence, as well as the strengthening of local solar businesses and providers of solar products and services. Challenges related to the market entry of low quality solar products and uncertified installations is hampering the market uptake and credibility in the technology. It also endangers the sustainability of the energy transition and safety. It has been observed that solar projects fail to meet their design specifications in consistent manner, with regard to efficiency and lifetime energy generation and benefits. This in turn has a high bearing on financial feasibility as higher risk margins are being included to counter these observed technical performance risks. This is though avoidable with more realistic and better verifiable technology performance data. Ideally, full standardisation of solar components and systems would be required with an accompanying global network of certified standardisation and testing facilities.

The STAR C will not be able to achieve a global standardization network within the two years and a half of project duration period. However, the project will contribute to reduction of technology risks by assessing and establishing solar products and services quality frameworks for an enhanced solar standardization, certification and accreditation ecosystem, setting up the roadmap for further development.

***Output 1.1: Regional quality framework for solar products established***

***Output 1.2: Regional quality framework for solar services established***

Under output 1.1 and output 1.2, the project will seek to improve regional qualification, certification and accreditation framework for photovoltaic and solar thermal products (panels, collectors, invertors, batteries, lanterns, etc.) and services (for design, engineering, installation, operation and maintenance) deployment. It will develop an initial regional model qualification and certification framework, which takes international best practices (e.g.: European Union) and the particular circumstances of African countries and SIDS into account (with a differentiating approach). The model shall provide guidance and equip STAR C, ISA developing countries and the GN-SECs with a tool on how to design and implement such a regional scheme. An initial baseline assessment on qualification and certification barriers and opportunities with regard to solar thermal and PV market development will be undertaken to prepare quality performance standards and compliance framework for solar services and products. The project will support the centres to implement these frameworks, building the capacities of identified institutes and bodies in the selected regions to get accredited, becoming certification providers at the regional level. The long-term objective is to enable a market-led scale up of solar energy and a vibrant market of appropriate and affordable solar supplies and services. Table 1 provides an outline of activities to be undertaken at regional level for both products (Output 1.1.) and services (Output 1.2.).

**Table 1: Key activities under output 1.1 and output 1.2**

Key activities under output 1.1 and 1.2	
<b>Assessment</b>	<ul style="list-style-type: none"> <li>• Assessment to Identify qualification and certification barriers hindering the uptake of <i>solar products and services</i> markets from international experience in the GN-SEC regions and ISA countries</li> <li>• Assessment of existing national/regional qualification, certification and accreditation frameworks (quality infrastructure) for solar products and services in GN-SEC regions and ISA member countries, status of enforcement and conformity of products with these or international standards (e.g., IEC, ISO)</li> </ul>

Key activities under output 1.1 and 1.2
<p><b>Development</b></p> <ul style="list-style-type: none"> <li>• Develop and facilitate the approval by local government of ISA countries within the GN-SEC regions of inclusive regional minimum quality performance standards and compliance frameworks for solar products and services in GN-SEC regions in line with international standards and best practices (e.g., IEC, ISO, Gogla, Clasp).</li> <li>• In line with the established quality frameworks, develop regional competency training schemes on solar product and services standards and identify relevant institutes and bodies, which are already or could become providers of solar products and services certification within the GN-SEC regions and ISA member countries</li> </ul>
<p><b>Technical assistance</b></p> <ul style="list-style-type: none"> <li>• Assist GN-SEC and ISA member countries in the implementation of regional standards and compliance frameworks for solar products and services (incl. processes for certification and accreditation) on national level in few pilot countries and mobilise international technical and financial support</li> <li>• Facilitate national and international accreditation of institutes and bodies within the GN-SEC regions and ISA developing countries, which are or could provide solar products and services certification, by strengthening their capacities or by teaming and twinning with other players. Share lessons of the accreditation process with other institutes/bodies within the regions for scale up.</li> </ul>
<p><b>Group of technical advisors on quality infrastructure</b></p> <ul style="list-style-type: none"> <li>• Establish group of technical advisors involved in quality infrastructure and the enforcement of solar quality products and services standards in 3 GN-SEC regions (e.g., test centres, universities and training institutes, industrial companies or importers).</li> </ul>

**Output 1.3: Regional monitoring and verification system established**

The establishment of quality framework of solar products and services are means to accelerate and scale up the deployment of regional-appropriate photovoltaic and solar thermal technologies in the selected GN-SEC regions. To ensure the sustainability of the frameworks, a regional monitoring and verification system will be established. ECREEE has already established a regional qualification and certification scheme for PV installation services. RCREEE runs a regional scheme for solar thermal installations. Valuable lessons learned can be drawn from these schemes and a monitoring and verification system can reinforce them, generating further lessons learned and recommendations for an enhanced regional regulatory framework.

**Table 2: Key activities under output 1.3 (Regional Framework and Capacity)**

Key Activities under output 1.3
<p><b>Development</b></p> <ul style="list-style-type: none"> <li>• Develop a regional monitoring, verification and enforcement (MV&amp;E) mechanism/tool for solar product and service standards, including recommendations regarding evolution of regulatory frameworks. Validate the tool in at least three GN-SEC regions before implementation.</li> </ul>
<p><b>Implementation</b></p> <ul style="list-style-type: none"> <li>• Facilitate the implementation of the MV&amp;E mechanism/tool for solar product and service standards in partnership with the GN-SECs and few selected countries, by appropriate planning and relevant regulatory framework. Assess the effectiveness of the mechanism/tool in at least two (2) GN-SEC regions</li> </ul>

The activities under outcome 1 will feed in the general conceptualization of the potential modules on solar products and services to be developed under outcome 2. The results of these activities should generate recommendations for the methodology to be applied in this later outcome.

**B.3.2 Outcome 2: Enhanced capacities of institutions to offer certified quality solar curricula and training**

Outcome 2 will focus on capacitating various institutions (universities, vocational training centres, etc.) to develop and implement a harmonised and adapted solar technologies curricula for the ISA developing countries in the targeted GN-SEC regions. The curricula will focus on PV and solar thermal

technologies and other thematic and complementary areas (see Annex 11). The project will primarily target pilot institution(s) (technical universities, technical institutes, and technical schools) with established basics structures to provide training on technologies in one of the GN-SEC regions. The objective will be to capacitate professors, who will further train project managers, engineers, practitioners, and technicians including, students to spur youth participation. They will further share the knowledge and skills, practically replicating and deploying the strategies and models acquired in the GN-SEC regions and targeted ISA developing countries. The set of interrelated activities under this outcome will ensure the durability of the project, providing concrete set of knowledge and tools, strengthening academic capacity to further train local people for a market uptake of PV and solar thermal technologies products and services.

**Output 2.1: Development of regional assessment and implementation framework for solar curricula**

Knowledge and pragmatic energy planning is needed to facilitate the implementation of established regional quality framework for solar products and services, subsequently supporting solar market uptake in the mid- and long-term. ISA, UNIDO and other development partners have a track record in developing and delivering solar energy training in different developing country contexts. An effort is already underway to collate training resources and make these available through ISA’s online solar academy. However, the combined impact of current solar training is hampered by lack of harmonisation in training content, with trainings often being put together on ad hoc basis by the team in charge of delivery within a specific project context. As a consequence, there appears to be an abundance and overlap of relatively entry level training and scarcity of advanced level specialist training. Therefore, if efforts are made to improve the knowledge gap in developing ISA countries and GN-SEC regions, there is still a need to assess the curricula currently offered to build a harmonised solar capacity building strategy and programmes recognised at regional levels. Output 2.1 will focus on assessing the current existing curricula to identify the available tools, knowledge, capacities, existing practical training infrastructures, gaps and opportunities for harmonisation and development of a regional solar capacity building strategy. The project will prepare alongside the regional strategy, guidance for best practices on implementing the strategy and established quality framework for solar products and services.

The project will seek to gather gender and youth sensitive data to be considered when developing and implementing the curricula. Table 3 provides a summary of foreseen key training activities.

**Table 3: Key activities under output 2.1 (Solar curricula regional assessment and implementation framework)**

Key activities under output 2.1.
<p><b>Assessment</b></p> <ul style="list-style-type: none"> <li>• In a gender responsive manner, assess gaps with regard to institutional training capacities, curricula (e.g., universities, vocational training centres), ongoing regional/national programs within GN-SEC regions addressing various technologies and beneficiaries (e.g., installers, planners, designer, financiers, project managers, policy makers)</li> <li>• Undertake assessment of solar skills needs, specifically in the context of gender mainstreaming</li> </ul>
<p><b>Development</b></p> <ul style="list-style-type: none"> <li>• Develop practical tool in a gender responsive manner to assess minimum quality conformity of national solar curricula offered by institutions for various solar technologies and beneficiaries in line with established standards or guidelines on regional/international level</li> <li>• Based on assessments (collecting and promoting best practises), develop regional solar capacity building strategies in various GN-SEC regions directed to enhance the quality and quantity of solar training institutions and curricula</li> </ul>

**Key activities under output 2.1.**

**Implementation (technical assistance)**

- Assist GN-SEC and ISA member countries in the implementation of the regional strategy and assessment tool on national level and mobilise international technical and financial support

The work undertaken under output 1 will partly inform output 2.2 activities. The proposed activities will be confirmed and tailored to the results of the assessment and the regional solar capacity building gender sensitive strategy developed.

**Output 2.2: Enhanced quality and accessibility of solar curricula, training materials and tools**

Activities under output 2.2 focused on capacitating professors at selected institution(s) (technical universities, technical institutes, technical schools) with an established structure to provide training on solar technologies in one targeted country. For that purpose, it will be necessary that trainings are developed by regional or international universities and research institutions with solid experience and mature curricula on solar energy, PV and solar thermal, and with proven academic background. A gender and youth lens will be used in the selection and assessment of the institution to ensure that women and youth are included when implementing and scaling up the project in the long term. The curricula will be developed based on the solar capacity strategy and in consultation and cooperation with Vocational Training Institutions (VTIs), universities and training centres. The participants to the consultations will include at least 40% of women and 30% of youth will be pursued (including at least 40% of youth women). The project will provide stakeholders with skills to mainstreaming gender in their daily work and stakeholder engagement.

The training developed will be availed with (moderated) e-learning and exit exams to set up a team of trainers in each pilot countries and regions who will then further train targeted stakeholders at the local level, raising awareness and replicating the programmes and models learned.

The project will seek to have both women and men skilled to become trainers. Based on the needs assessment (output 2.1) bridging courses for women to also become trainers will be offered (if needed). Table 4 provides a summary of foreseen key training activities.

**Table 4: Key activities under output 2.2 (Capacity Building)**

Key activities under output 2.2.
<p><b>Tools and material development</b></p> <ul style="list-style-type: none"> <li>• Develop solar skills development plan and develop and facilitate the application of quality solar capacity building tools and training materials in partnership with VTIs, universities and centres, for both the trainers and the trainees</li> </ul>
<p><b>Curricula development with a gender responsive manner</b></p> <ul style="list-style-type: none"> <li>• Develop adapted solar technologies curricula and the modules under thematic clusters on photovoltaic solar technology to the conditions of a pilot country (see Annex 11 for further details on thematic clusters, PV) with a gender responsive manner</li> <li>• Develop solar technologies curricula and the modules under thematic clusters on solar thermal technologies to the conditions of a pilot country (see Annex 11 for further details on thematic clusters, solar thermal) with a gender responsive manner</li> <li>• Develop the curricular and the modules for other thematic areas linked to solar technologies and the regional needs with a gender responsive manner. This section of thematic areas also included training topics in gender equity and equality (see Annex 11 for further details on thematic clusters, linked areas with solar energy)</li> </ul>
<p><b>Training structure establishment</b></p> <ul style="list-style-type: none"> <li>• Establish a Solar Energy Academy for East Africa and Harmonization of Certification for Solar Technicians</li> </ul>



Key activities under output 2.2.

**Testing**

- Deliver test modules developed under the above activities in at least 2 GN-SEC Regions to gather feedback, incorporate improvements and implement. The test will be gender-focused (targeted at least 40% women and including gender mainstreaming measures)

**Output 2.3: Certified trainings for capacity building institutions and decision-makers (train the trainers)**

STAR C project is aiming at deploying knowledge and quality standard for solar technologies, setting the basis to support solar energy market uptake in ISA developing countries and GN-SEC regions, involving SIDS. To fulfil this goal, the project will provide under output 2.3 hands-on gender responsive training for capacity building institutions which will be responsible to transfer the knowledge at a larger scale. Trainings will be delivered by regional or international universities and research institutions with solid experience and mature curricula on solar energy, PV and solar thermal, and with proven academic background. In order to ensure acceptance and support by local government, the project will as well raise awareness and build the capacity of decisions makers involved in the approval and enforcement of solar quality infrastructure activities.

As many countries have now implemented some solar – pilot - projects, albeit in many places at limited scale, the observatory service aims to monitor and document solar project achievements and learnings in a transparent and accountable manner (in close connection with our partners and members). This will inform and enable the further development of the national ecosystem at large and generate input for the global knowledge function of the project. The project will develop a monitoring tool gathering quantitative and qualitative data including best practices to continuously assess and improve the certified training. Table 5 gives an indicative outline of activities to be developed.

**Table 5: Key activities under output 2.3 (Certified Training)**

Key activities under output 2.3.

**Certified training**

- Conduct certified solar trainings for capacity building institutions with replication effect (e.g., train the trainers), tracking gender-related issues (e.g.: sex-disaggregated data on solar workforce) and best practices for gender mainstreaming of solar energy projects

**Awareness raising**

- Conduct three (3) awareness raising and capacity building workshops of about 3 days each for about 125 decision-makers, involved in the approval and enforcement of solar quality infrastructure activities (approximate gender parity of 40-60%)

**Monitoring**

- Develop a tool to monitor the implementation of the certified training, and identify, track and periodically review the performance of trainings in order to promote certified training reports insights and learnings for replication and scaling up

**B.3.3 Outcome 3: Increased impact of solar networks and knowledge management systems**

Activities under Outcome 3 will facilitate dialogue, knowledge transfer and dissemination as well as awareness of solar related topics. Activities under this outcome will support the establishment and/or the strengthening of regional solar networks, and partnership with existing international networks and programs. Multi-dimension (South-South, North-South and triangular) solar technology cooperation and transfer are a high priority for the project.

**Output 3.1: Strengthened regional solar networks**

The starting point under outcome 3 is to assist the GN-SEC centres strengthening, ISA developing countries and establishing regional network for an efficient transfer of solar related knowledge. Event and programs will be offered to promote professional collaboration, facilitating networking among members, information dissemination in pursuit of solar market uptake in targeted ISA member states and GN-SEC centres. The details will be consolidated during the project implementation. Table 6 provides a summary of the types of activities to be undertaken to strengthen the regional solar networks.

**Table 6: Key activities under output 3.1 (Regional Solar Networks)**

Key activities under output 3.1.
<p><b>Network management</b></p> <ul style="list-style-type: none"> <li>• Establish networks for solar market enablers (e.g. practitioners, suppliers, universities, vocational training centres, installers, financiers, policy makers, rural electrification experts) in GN-SEC regions, and promote the regular interaction of experts with GN-SEC regions on solar issues (at least one interaction focuses on gender issues)</li> <li>• Regional guideline/manual for the creation of sustainable energy (incl. solar) associations developed and practically tested in the case of one (1) association in the Pacific (e.g. support for Business Plan development);</li> </ul>
<p><b>Networking events</b></p> <ul style="list-style-type: none"> <li>• Organise at least three events on solar systems such as energy fairs, forums, conferences, etc.</li> <li>• Organise study tours to specialized centres in PV and solar thermal in order to reinforce acquired expertise</li> </ul>

**Output 3.2: Partnerships with international solar networks and programs**

In order to spur knowledge exchange and experiences, ISA and UNIDO will assist the project in collaborating with like-minded organisations such as Sustainable Energy for all (SEforALL), and accelerator platforms such as the Clean Energy Investment Accelerator (CEIA), the Energy Transition Accelerator Financing (ETAF) Platform, etc. The project will strive to create as well a multi-dimensional cooperation between ISA developing countries and non-ISA members within the targeted GN-SEC regions in order to share experiences and develop partnerships. Table 7 provides a summary of the types of activities to be undertaken in terms of partnership.

**Table 7: Key activities under output 3.2 (Partnership)**

Key Activities under output 3.2.
<p><b>Partnerships</b></p> <ul style="list-style-type: none"> <li>• Partner with other relevant organisations to conduct certification of trained participants (e.g., national energy Centres and Vocational Training Institutions -VTIs)</li> </ul>

**Output 3.3: Establishment of a joint solar knowledge platform (ISA and GN-SEC)**

To help different stakeholders capture knowledge on different solar energy aspects, the project will support the upgrading of the ISA website from a document library to a user-driven expert system. The website will promote case studies and best practices on business models, technology, and policy and regulation. For instance, it is planned to partner with the Cornerstone of Rural Electrification (CORE) Initiative, initiated by the Alliance for Rural Electrification (ARE), International Renewable Energy Agency -IRENA, SEforALL, UN Environment Programme – UNEP, UNIDO and the International Copper Alliance (ICA) on the development of regional qualification and certification frameworks for decentralized solar technology solutions in Africa and SIDS. Strategic partnerships will strengthen the establishment of the solar knowledge platform for higher impact and performance.

Regular online webinars on relevant topics for solar energy deployment will organized in cooperation with the GN-SEC as described in table 8.



**Table 8: Key activities under output 3.3 (Dissemination)**

Key activities under output 3.3.
<p><b>Dissemination platform</b></p> <ul style="list-style-type: none"> <li>• STAR C website that promotes interaction between members and with ISA with two-way communication protocol.</li> <li>• Establish a joint solar knowledge platform on the ISA and GN-SEC websites</li> </ul>

#### B.3.4 Outcome 4: Effective STAR-C management and governance structure established and sustained

Under this outcome the project implementation and management structures for the STAR C project will be defined, set up and operationalised. UNIDO and ISA as implementing agencies will be responsible for the planning, implementation, monitoring, and reporting, all these in coordination with the governance of France. They will manage the project according to UNIDO and ISA Trust Fund Agreement (to be signed for the operational phase) and to France-ISA trust fund agreement and annually approved budget and workplans by the Supervisory Committee. For the implementation of activities as distributed at the inception phase, each organisation will follow their respective rules and regulations under the consultation and overarching guidance of the Government of France.

***Output 4.1: STAR-C Secretariat staffed and activities are effectively implemented***

***Output 4.2: STAR-C short-term and long-term planning framework and governance implemented***

This output covers the design and setting up of the STAR C project management units at UNIDO and ISA, and the planning of the project implementation. ISA and UNIDO will respectively appoint a team in charge of overseeing the overall implementation of their allocated activities. UNIDO will mobilize the required services of the related technical, administrative and financial departments at UNIDO Headquarters and the GN-SEC centres. The main planning and team set up related activities are summed up in following Table 9.

**Table 9: Key activities under output 4.1 and output 4.2**

Key activities under outputs 4.1 and 4.2
<p><b>Project teams</b></p> <ul style="list-style-type: none"> <li>• Establish project management team at UNIDO (funded through French contribution) with 40% women.</li> <li>• Establish project management team at ISA (funded through French contribution) with 40% women</li> <li>• Recruit three (3) Juniors STAR-C staff including at least one woman at the three (3) GN-SEC centres</li> <li>• Recruit junior STAR C staff in pilot countries</li> </ul>
<p><b>Planning</b></p> <ul style="list-style-type: none"> <li>• Prepare detailed STAR C strategy and annual operational workplans, based on available budgetary resources, achievements and lessons learned and reported needs of ISA member countries and countries covered by GN-SEC centres involved in the project, including a gender mainstreaming action plan</li> <li>• Develop, promote and start implementing sustainability strategy and business and financing model for continued STAR service delivery post current project period</li> <li>• Resource and funding mobilization and accounting to donors</li> </ul>

***Output 4.3: Monitoring and reporting***

The project operates under the guidance of established Supervisory Committee.

The ISA and UNIDO project teams will elaborate a comprehensive and transparent system of Key Performance Indicators (KPIs) to monitor the activities and outputs of the project, with each KPI being

specific to only one of the project outputs. They will then collect data for each and provide updates on the KPIs in a project dashboard as well as through inclusion in the narrative management reports. At least two narratives and financial project reports will be prepared yearly to give an overview and state of play of the activities, achievements, challenges and opportunities of the project. Project monitoring and reporting will include specific gender mainstreaming indicators and aspects of the project. Table 10 lists the main activity under this last output and further information could be found in Section E3.

**Table 10: Key activities under output 4.3 (Monitoring and reporting)**

Output 4.3. Key Activities
<p><b>Monitoring and Reporting</b></p> <ul style="list-style-type: none"> <li>• Establish KPIs for STAR C activities and achievements and establish system for transparent collection and documentation of these KPIs</li> <li>• Prepare narrative and financial reports on implementation of STAR C project, and regularly monitor the gender mainstreaming action plan</li> </ul>

Annex 10 describes the log-frame of the STAR C project.

## B.4 Indicative Workplan

This STAR C project will be rolled out in an organic manner within the overall framework of outputs and key activities summed up in the preceding section B.3, in response to the specific priorities articulated by selected ISA developing countries, GN-SEC centres involved in the project, the interests, capabilities and needs of the STAR network members and the available financial and other resources as well as the priorities of the donors. The detailed project activities, the balances between outputs and outcomes these contribute to, and their prioritization and sequencing will therefore be determined and adjusted at least on an annual basis through the planning and budgeting cycle and associated narrative and financial progress reporting. Given the synergistically and mutually reinforcing design of the outcomes and outputs, it will be attempted to maintain at any point of time some activity within each of the outputs. To illustrate possible development, Annex 12 depicts a non-binding and indicative workplan.

## B.5 Cross Cutting Priorities

### B.5.1 Gender Mainstreaming

As reflected in its Policy on Gender Equality and the Empowerment of Women (GEEW)<sup>10</sup>, UNIDO is committed to mainstream gender dimensions in the design, execution, monitoring, and reporting of its technical cooperation projects. Relevant guidance on gender mainstreaming is included in UNIDO Guide to Gender Analysis and Gender Mainstreaming the Project Cycle<sup>11</sup> published in 2021. This STAR C project follows UNIDO Gender Policy and relevant guidelines.

Interventions related to energy and the environment are expected to have an impact on people and are, therefore, not gender-neutral. As a guiding principle, the project will ensure that both women and men are provided equal opportunities to lead, participate in and benefit from the project. Therefore, gender dimension has considered and included throughout the project. This will for instance include the identification of the differentiated needs and roles of women and men with respect to the capacity building interventions of the project.

<sup>10</sup> UNIDO (2019), *Policy on Gender Equality and the Empowerment of Women*, Director General Bulletin 2019/16, 18 September 2019, [https://www.unido.org/sites/default/files/files/2019-11/DGB\\_2019\\_16\\_Policy\\_on\\_Gender\\_Equality\\_and\\_the\\_Empowerment\\_of\\_Women\\_1.pdf](https://www.unido.org/sites/default/files/files/2019-11/DGB_2019_16_Policy_on_Gender_Equality_and_the_Empowerment_of_Women_1.pdf)

<sup>11</sup> UNIDO (2021), *UNIDO Guide to Gender Analysis and Gender Mainstreaming the Project Cycle*, [https://www.unido.org/sites/default/files/files/2021-06/Gender\\_mainstreaming\\_Guide\\_1\\_Main\\_guide.pdf](https://www.unido.org/sites/default/files/files/2021-06/Gender_mainstreaming_Guide_1_Main_guide.pdf)

Overall, the project sets out to demonstrate good practices for a just energy transition, considering not only gender equality and women's empowerment but also youth engagement and the involvement of minority groups wherever possible, and to avoid negative impacts on people in general, including due to their gender, age, ethnicity and/or religion.

### ***Gender analysis and action plan***

The preparatory phase of the project is ongoing, and a gender analysis will be conducted in line with the guidelines set out in the UNIDO Guide to Gender Analysis and Gender Mainstreaming the Project Cycle to ensure that the qualification and certification framework will be elaborated in a gender-responsive manner in order to establish gender responsive indicators, targets and baseline. Based on the gender analysis a gender mainstreaming strategy and action plan will be developed that includes assigned responsibilities and implementation arrangements. Table 11 shows key gender mainstreaming activities for the project include:

**Table 11: Mainstreaming activities**

<b>Strategies and Activities</b>	<ul style="list-style-type: none"> <li>• Activities are planned in a gender responsive manner.</li> <li>• Approximate gender parity (i.e. 40-60%) in project activities and events will be ensured (for instance, in events attention will be paid to AI/2020/03 - Equal representation of women: UNIDO's policy on panel parity).</li> <li>• Youth participation will be pursued with at least 40% of young women.</li> <li>• Normative and convening activities will be integrated in the outputs.</li> <li>• STAR-C will develop a gender strategy and action plan:               <ul style="list-style-type: none"> <li>- A gender analysis will inform the development of a gender action plan including gender targets and a gender mainstreaming strategy.</li> <li>- A gender action plan with specific activities, responsibilities and timelines will be developed and implemented.</li> </ul> </li> </ul>
<b>Data, Indicators and Statistics</b>	<ul style="list-style-type: none"> <li>• Sex-disaggregated data on beneficiaries/participants/facilitators/ experts will be collected during implementation (women and men, women- and men-owned/led businesses).</li> </ul>
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Project reports and advocacy material will cover gender-related results and best practices, as well as the voices of both women and men</li> <li>• Outreach and communication material will be gender responsive, e.g. avoid gender stereotypes but instead depict women also in non-traditional roles.</li> </ul>
<b>Procurement of Goods and Services</b>	<ul style="list-style-type: none"> <li>• Specifications for services, goods and equipment will take into consideration the needs of both women and men.</li> <li>• Procurement notices will also be disseminated on platforms and networks frequently used by women-owned/-led businesses such as women's business organizations, and/or directly to relevant women-owned/led businesses.</li> <li>• The terms of reference or technical specifications of procurement notices will request information from bidders on their corporate action to promote GEEW (gender equality and the empowerment of women) in line with the Women Empowerment Principles, or similar frameworks. If an evaluation method with weights or points is applied, gender-responsive activities, policies and strategies of the bidding entity will be rewarded.</li> </ul>
<b>Gender Capacities / Human Resources</b>	<ul style="list-style-type: none"> <li>• Project/programme personnel have gender-related knowledge as well as gender-related tasks included in their job descriptions.</li> <li>• Project personnel will have to complete relevant training on GEEW (e.g. UN Women online courses on basic concepts of GEEW (I Know Gender 1-2-3, I Know Gender Module 15 on gender and sustainable industrial development).</li> <li>• Aim is to ensure an approximate gender parity of at least (40-60%) among project/programme personnel</li> <li>• Gender awareness of staff working for STAR-C created and their ability to mainstream gender into their work.</li> </ul>

<b>Stakeholders &amp; Participation</b>	<ul style="list-style-type: none"> <li>• The project has potential to improve GEEW in ISA developing countries and GN-SEC regions through women-targeted capacity building activities and raising gender awareness, which will be developed during the preparatory and implementation phases of the project.</li> <li>• Approximate gender parity (40-60%) and gender expertise within stakeholder committees will be targeted.</li> <li>• Awareness among key stakeholders about the relevance of gender equality for development and the guiding principle that both women and men must have equal opportunities to lead, participate in, and benefit from the project outputs and activities.</li> <li>• Stakeholders will be capacitated on gender issues to ensure that gender-responsive implementation continues after the end of the project.</li> <li>• The project will ensure to involve a gender expert(s) and/or organizations/associations that promote GEEW to ensure that gender dimensions.</li> </ul>
<b>Monitoring and reporting of gender mainstreaming within the project</b>	<ul style="list-style-type: none"> <li>• Sex-disaggregated data will be collected and analysed to track gender equality results.</li> <li>• Good practices and lessons learned on promoting GEEW and on the effectiveness of gender-responsive targets/indicators will be identified and reported.</li> <li>• Assessments, audits will include gender as a specific criteria/component.</li> <li>• Gender-specific evaluation questions and components will be included in evaluation ToRs.</li> </ul>

### B.5.2 Environmental and Social Safeguards

The present project sets out to facilitate the large-scale deployment of solar technologies in ISA Member Countries and selected countries from the regions covered by the GN-SEC centres involved in the project. It will promote good environmental and social practices and techniques throughout its activities to prevent and/or mitigate adverse impacts from the solar energy transition in ISA Member Countries and selected countries from the regions covered by the GN-SEC centres involved in the project. However, as it is not foreseen that this joint ISA UNIDO STAR C network support project itself will develop and construct solar projects, impact environmental assessments and planning are not specifically required.

The proposed project focuses on capacity building activities and the setup of quality frameworks on products and services with no investment on the ground, therefore it can be considered a Category C project according to UNIDO ESS Policy<sup>12</sup>. The proposed project is likely to have minimal or no adverse social and/or environmental impacts. No further specific environmental and/or social assessment is required during Project Formulation, although those with procurement components may still have potential environmental and social sustainability considerations. These will be addressed as part of the regular project design activities and through UNIDO’s procurement processes, as applicable.

A specific Environmental and Social Safeguards Policies and Procedures will be developed for the STAR C network (as part of technical support provided by UNIDO) based on existing ISA and UNIDO policies. These will apply STAR C network support project and allow for early identification and proactive and preventive management environmental and social impacts of the project STARC network.

### B.5.3 Alignment with SDGs

Through the capacity building and knowledge activities as well as the focus on creating an enabling environment for the uptake of solar energy, contributing to the transition to low carbon system, the STAR C project is consistent with and contribute to the Sustainable Development Goals: SGD 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; SGD 5 -

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<sup>12</sup> AI/2021/03 - UNIDO Environmental and Social Safeguards Policies and Procedures

Achieve gender equality and empower all women and girls; SDG 7 - Ensure access to affordable, reliable, sustainable and modern energy for all; SDG 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation; SDG 13: Take urgent action to combat climate change and its impacts; SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

## B.6 Sustainability

The STAR C project has been designed to achieve sustainability at both national and regional levels. As a component therein, a post establishment phase sustainability strategy and business and financing model for STAR C will be developed during the operational phase of the STAR C project (two and a half years), with start of its realization after the inception phase.

At the national level, STAR works through its members and selected countries of the regions covered by the GN-SEC centres involved in the project, which are existing institutions (e.g. National Focal Points) that are supported to develop and deliver STAR services. The STAR services are aimed to create a network of knowledge and expertise on solar energy deployment that captures and disseminates globally available best practices in all aspects of solar energy deployment, through the implementation of a comprehensive program for capacity building, qualification and certification, and quality frameworks for products and services, considering knowledge dissemination, training, networking, standardization and matchmaking. With such knowledge and background, the network members would be in a premium position to deliver solar technology services beyond this STAR C project.

At the regional level, the STAR C project is operating within the Secretariat of ISA which directly services the common and specific interests of ISA member countries. As the solar transition progresses, more development and investment partners and resources are expected to become available globally for solar projects and these require networks of competent national partners to plan, execute and manage solar projects. STAR C could assume a facilitating and enabling role. As STAR C matures and demonstrates its added value for capacity building and implementation of quality frameworks, more solar stakeholders will be interested to use the STAR resources and networks for efficient and effective delivery of solar energy projects.

To increase the impact of the initiative, it is planned to mobilise further funding support during the implementation of the project. Therefore, the project document includes a conservative and optimistic budget scenario. This will allow further donors to join the initiative at a later stage. Initially, under the conservative scenario funded by the Government of France, the project will focus on countries covered by the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), the East African Centre for Renewable Energy and Energy Efficiency (EACREEE) and the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE). The project document includes a detailed results framework with measurable indicators, which allows a flexible extension of the geographic and thematic coverage for an optimistic scenario. For guaranteeing quality performance in the achievement of the outcomes of STAR C, GN-SEC centres will be acting as focal points for coordination, data collection, consultations, services delivery, among others at national and regional level. GN-SEC centres will work closely the PMU at ISA and the Management Unit at UNIDO.

It is envisaged that the STAR C is operates beyond the project duration of 60 months (optimistic scenario). After the operational phase (two and a half years), ISA is supposed to take over full responsibility for the initiative. UNIDO provides peer-to-peer learning and institution building support. UNIDO commits to support ISA to get STAR C started and operational and further if necessary, capitalizing both on UNIDO's knowledge of corporate processes and systems for technical cooperation delivery in developing countries as well as its knowledge, expertise and resources for solar technology deployment (as also elaborated in section B.3). The STAR project targets sustainability in social, technical, institutional, political and financial terms. Table 12 outlines the approach taken to sustainability in each of these areas.

**Table 12: Sustainability dimensions and actions for STAR C project**

Sustainability criteria	Criteria/aims	Actions taken during project formulation	Project design elements and planned actions
<b>Political sustainability</b>	Continued support for STAR C project under ISA’s short- and medium-term strategy by ISA and among its member countries	Extensive consultations of member countries, solar energy stakeholders, GN-SEC centres	Continuous engagement of ISA NFPs in particular for country level planning and implementation of STAR services
<b>Technical sustainability</b>	Analysis, advocacy and technical work are conducted by STAR members and GN-SEC centres for the ISA member countries, with in country capacity created to increase the likelihood of further activities being done by the STAR members independently	Technical cooperation and support focused on strengthening capacity of STAR members and GN-SEC centres	STAR services to be delivered with professionalism to internationally acceptable technical standard – to be achieved through peer review, code of conduct and other professional development support
<b>Financial sustainability</b>	Secure adequate seed funding to start and operate STAR C for initial period of up to 2.5 years. Develop alternative funding models and sources for continued development and operation of STAR C beyond this establishment stage, possibly 2.5 additional years.	Target priority donors to provide core/earmarked funds for STAR C	Develop and promote alternative business and financing models for STAR services delivery
<b>Institutional sustainability</b>	<i>Global:</i> UNIDO exit strategy is made clear (capacity development for inception phase) and STAR C is strongly anchored as a core activity of the ISA Secretariat <i>Country level:</i> STAR services delivered by independent network members which have their own legitimacy beyond STAR C project	Clarification of roles and responsibilities  Clarification of independence of network members	STAR C plans to mentor each of its network members individually and specifically to organize and strengthen national solar deployment ecosystems

## B.7 Risks

The principal risks for the implementation of the proposed STAR C project have been summed up in the following Table 13. Beyond the scope of UNIDO and ISA individually and through their joint project management, STAR C assumes sustained global commitment to sustainable energy for all and climate action (as per SDGs 7 and 13, both of them well integrated to SDG5 on gender equality) and recognition of the critical role therein of the solar energy transition. This should manifest itself in continued expansion of the solar sector, in terms of installed capacity, investments, technology and innovation, covering the different solar technology verticals (PV, SHIP -solar heating industrial process-, decentralised, etc.) – as a continuation of strong development, expansion and innovation over the past decade. Moreover, the global community has started a gradual recovery of global and local economies from the COVID-19 pandemic, allowing reopening of trade and travel to reduce constraints to networking and international collaboration for the success of the STAR C project.

**Table 13: Risk assessment and mitigation measures for STAR C project**

Risk	Level	Mitigation Measures
Unnecessary duplication of efforts of other existing international and regional initiatives focused on solar technologies, specifically on quality infrastructure and capacity building programs	Medium	<ul style="list-style-type: none"> <li>• Thorough baseline analysis carried out at the PA (preparatory assistance) stage of the project</li> <li>• Design of specific knowledge products and quality infrastructure frameworks reflecting the baseline and gap analysis to be delivered by the STAR C project in its main phase</li> </ul>
Unpredictable and/or wavering political will and support for the STAR C Project globally and/or its network members nationally. As a result thereof, STAR network members may remain side-lined from country level planning, financing and implementation architecture in ISA member countries	Medium	<ul style="list-style-type: none"> <li>• Regular and in-depth engagement and briefing of NFPs regarding country level priorities, activities and achievements to ensure alignment with ISA member countries’ needs and initiatives, maintain accountability and set strategic and operational directions</li> </ul>



Lack of transparency and stable policy and operational environment for the STAR network members.	Medium	<ul style="list-style-type: none"> <li>Practical demonstration of benefits from STAR services, including short-term socio-economic benefits and sustainable energy outcomes, and transparent communications to encourage broad positive perceptions of STAR C network members and their STAR services</li> </ul>
STAR C project will drive STAR C strategy and policy globally. However, this needs to be updated and made relevant to the ISA member countries and showcased at regional and national levels		
Sustainable funding mechanism cannot be established for STAR C	Medium	<ul style="list-style-type: none"> <li>Once STAR services have been operationalized, the project will identify, evaluate and promote alternative business and funding models</li> </ul>
Universities and training institutions cannot be engaged	Medium	<ul style="list-style-type: none"> <li>Advisory work and capacity building means</li> <li>Liaison and engagement with GN-SEC centres to ensure participation of local/national and regional trainings institutions</li> </ul>
Professional capacity in STAR network members is limited and/ or unavailable to deliver quality STAR C services	Medium	<ul style="list-style-type: none"> <li>UNIDO and ISA will succeed to identify and engage suitably qualified professionals and may twin or match on regional basis to complement for skills deficiencies that may exist at national level</li> </ul>
Social and Gender Risk	Medium	<ul style="list-style-type: none"> <li>To mitigate this risk the project will pursue thorough and gender responsive communication showing the benefits of gender equality for both women and men, and ensure stakeholder involvement at all levels, with special regard to involving both women and men, as well as CSOs and NGOs promoting GEEW, and gender experts. This shall mitigate social and gender related risks, promote gender equality, create a culture of mutual acceptance and understanding, and maximize the potential contribution of the project to improving gender equality in the energy field.</li> <li>To attract qualified female candidates to the project, adequate and gender responsive communication strategy will be carried out by reaching out to women’s groups and associations, while also making trainings and workshops accessible for women, e.g. by providing safe transport, offering childcare, offering trainings at suitable times for women when children are in school and day-care, etc. If necessary and in the scope of the project additional bridging courses for women will be considered, developed and implemented to empower women.</li> </ul>
There could be a risk of resistance against the involvement of women or activities that promote GEEW. Or there could be a lack of interest in, the project activities from stakeholders, especially with regard to the active promotion of gender equality.		
Low participation rates of suitable female candidates due to lack of interest, inadequate project activity or missing qualified female population within engineering sector.		
Political and economic instability in ISA member countries that cannot support STAR C network members to deliver results that are relevant to country context (socio economic, energy etc.)	Low to Medium	<ul style="list-style-type: none"> <li>Adaptive management to adjust national and regional STAR services planning to evolving country development situation and sustainable energy needs</li> <li>Adjust input and service delivery as necessary</li> </ul>
Frequent personnel and counterpart changes mean that investments in building individual capacities are diverted from STAR C project outcomes. ISA and UNIDO hold on to relationships and knowledge preventing institutionalization	Low to Medium	<ul style="list-style-type: none"> <li>Diversify engagement beyond existing champion institutions and individuals</li> <li>Focus on institutionalisation of capacity building, training and awareness efforts within key partner institutions to manage turnover</li> <li>Support to longer-term visioning and planning processes for systemic change</li> <li>Frequent communication between ISA and UNIDO through the PMU.</li> </ul>
Changing institutional mandates of key government agencies and institutions, creates uncertainty and affects impact of advisory services and capacity building efforts	Low to Medium	<ul style="list-style-type: none"> <li>Regular and ongoing engagement with national government and institutions, beyond NFP, and advocacy for strong role of government in national solar deployment ecosystems and capacity building initiatives</li> </ul>
Lack of interest from ISA member countries in global STAR C project and its STAR services	Low	<ul style="list-style-type: none"> <li>Clear communications and engagement on STAR C with ISA member countries and countries from GN-SEC centres involved in the project, with a focus on developing country benefits being achieved</li> </ul>
Failure to secure the ongoing support from ISA Secretariat and its decision-making organs	Low	<ul style="list-style-type: none"> <li>ISA Secretariat owns the STAR C Project on behalf of its member countries and will take an active role in planning, oversight and execution of the STAR C project</li> </ul>

		to ensure continued relevance to mandate of ISA and evolving interests and needs of its member countries
COVID-19 or another global pandemic	Low	<ul style="list-style-type: none"> <li>• STAR C will strongly rely on its network members and key stakeholders to ensure the implementation of the project</li> <li>• Widespread use of remote communication services including online trainings, meetings.</li> </ul>

## C. Project Inputs

STAR C will require inputs from diverse stakeholders nationally, in the selected ISA developing countries and GN-SEC centres/regions where STAR network members deliver STAR services.

### C.1 Joint ISA UNIDO Approach

To further elaborate on the relevance of STAR C and assess the aspiration of ISA member countries, a consultation workshop on the development of the STAR C was jointly convened by ISA and UNIDO in Paris from 25<sup>th</sup> to 27<sup>th</sup> February 2020. The workshop was generously hosted by the Government of France. Representatives from 28 ISA member countries and organisations, including from the UNIDO facilitated GN SEC and CTCN, attended the workshop. The stakeholder consultation workshop identified needs and expectations of the proposed STAR C project, as well as the key challenges to large scale deployment of solar technology, the building of a solar-capable workforce, and the creation of a competitive and inclusive market for solar products and services. The list of indicative key activities to be undertaken under the STAR C, as indicated before, were identified through coordination and monitoring mechanisms with the selected ISA developing countries (see Annex 4). Furthermore, from June 2021 to January 2022, several consultation meetings were held with GN-SEC centres involved in the project in order to jointly define priority activities and needs of member countries.

### C.2 Guiding Principles

To focus its work on augmenting, synergizing, and scaling up past, present and potential future solar energy deployment initiatives, STAR C will observe the following principles:

1. *Mission driven*: STAR C will support ISA in achieving its mission towards large scale deployment of high-quality solar technologies at affordable costs and market services for entire value chains in its Member Countries and GN-SEC centres involved in the project by the implementation of a comprehensive program of capacity building, qualification and certification, and quality frameworks on solar technologies for products and services. In practical terms, the STAR C will undertake activities that directly contribute to large scale application of solar energy, wherein large scale is understood as (1) having high potential for energy generation and/or GHG mitigation; (2) making a strategic and/or systemic contribution to the low emission energy transition and/or market transformation, improving energy access and/or achieving energy security; (3) having high replicability for beneficiaries and/or of applications; and/or (4) any combinations thereof;
2. *Technology-specific*: STAR C will provide comprehensive support to PV and solar thermal technologies with special focus on solar heat for industrial processes (SHIP) that support priorities of ISA developing countries and GN-SEC regions for mitigation and adaptation to climate change and/or for achieving sustainable energy for all, and/or that support national sustainable development priorities.
3. *Market-transformation*: STAR C achieves additionality by building upon and complementing past, ongoing and future solar energy relevant programmes and initiatives, particularly their knowledge, expertise, tools and lessons learned, for developing and transforming markets and for realizing large scale investments in solar energy considering specific circumstances of member states' urban and rural areas;



4. *Excellence*: STAR C brings together competent and committed institutions to scale up and speed up the application of nationally- and/or regionally appropriate global best practices in regard to policy, technology, design, installation, operation and maintenance, applications, and financing of solar energy. Members of STAR C will be further identified, selected and united by their demonstrable solar energy knowledge and expertise and commitment to the mission of the ISA and the highest professional standards.

### C.3 ISA Project Inputs

ISA as the owner and co-execution partner of this STAR C project will contribute following inputs at no cost to the project budget this STAR C project:

1. Time and associated office, support and related costs of the core and project staff of its Secretariat for coordination, supervision, planning, reporting and advocacy on STAR C to its member countries and other constituencies.
2. The solar technology information, knowledge and training resources and associated tacit knowledge ISA has already accumulated in, but not limited to, ISA Infopedia and solar academy, in the understanding that these will be improved and expanded through the STAR C project and remain available without restriction to be used by the Secretariat, member countries and other constituencies of ISA; and
3. The non-exclusive right to use the ISA logo/emblem for the sole purpose of execution, reporting and promotion of the STAR C project.

Moreover, ISA will also provide further inputs to specific STAR C activities on chargeable basis for the associated direct and support costs to the STAR C project budget (as stated in Section F), particularly:

1. Costs associated with participation of ISA core and project staff in specific STAR C activities;
2. Cost of production and promotion of STAR C project outputs, as well as knowledge sharing.; and
3. Cost of ad hoc short-term project staff/consultancies for specific STAR C assignments for which ISA would have a comparative advantage to lead.
4. Knowledge creation with support of its National Focal Points (NFPs) through needs assessment to pave the way for scalability of the project. Mainly support at country base level.

### C.4 UNIDO Project Inputs

UNIDO is the co-executing, knowledge and technical capacity partner collaborating and with ISA on this STAR C project and will avail its knowledge of corporate processes, systems and experiences for execution of the project in the participating ISA developing countries and GN-SEC centres.

Besides assisting in the conceptualisation and design of the Project, UNIDO will continue to provide technical assistance to the project to ensure a quality delivery. UNIDO will work towards the sustainability of the STAR C. UNIDO's support will cover the first operational phase (two and a half years) with possible extension (two and a half additional years) depending on funds and additional donors' contributions with support of the Government of France; after which the relationship would evolve to project-based partner cooperation (e.g. implementation of GEF projects). Moreover, UNIDO will provide technical assistance from headquarters. In addition, UNIDO will use its international networks to assist the Project in establishing partnerships with other international players so that the STAR Project can leverage its expertise and technologies.

*UNIDO will contribute the following inputs to the STAR C with costs covered by the earmarked budget for this project:*

1. Working hours of the GN-SEC team in UNIDO HQs and associated offices, the regular staff and project recruited staff (in headquarters and field offices) for oversight, liaison and advocacy on

STAR C in ISA developing countries and GN-SEC regions involved in the project as well as UNIDO Member States and other constituencies, as agreed with ISA;

2. The solar technology information, knowledge and training resources and associated tacit knowledge it has obtained from past and ongoing solar relevant technical cooperation projects, including through the GNSEC, CTCN and/or PFAN in the understanding that the original sources and, as appropriate their donors and knowledge and execution partners, will at any time be attributed; and
3. Experience in the establishment of regional partnerships and projects, involving GN-SEC centres to materialize implementation of activities at regional level
4. The non-exclusive right to use the UNIDO logo/emblem in line with the UNIDO Communication Guidelines and contractual arrangements established for the sole purpose of execution, reporting and promotion of the STAR C project.

UNIDO will furthermore provide the specific project-related (or direct) inputs to the project on a chargeable basis against the project budget (provided in section F), in accordance with the UNIDO financial rules and regulations<sup>13</sup>. The broad categories/definitions of these chargeable project inputs are detailed in following Table 14, categorized as per UNIDO's internal budget lines.

**Table 14: Summary of project inputs to be supplied through UNIDO for implementation of the Project**

Budget Line	Description	Specific UNIDO project inputs to the implementation of the STAR C project
1100	International experts	<ul style="list-style-type: none"> <li>• International project staff, both regular/long term (as a supporting staff) and short term (for specific assignments, e.g. document drafting, procurement activities, etc.)</li> </ul>
1101	Staff – cost recovery	<ul style="list-style-type: none"> <li>• UNIDO Project Manager. Responsible for the overall strategic steering and managerial supervision of the project. The project manager also provides alignment of technical inputs with international best practices and UNIDO quality standards. Clearance of technical reports. His/her input will be charged as direct cost to the project.</li> <li>• Industrial Development Officer or its equivalence. Support the PMs in the coordination and efficient implementation of the project.</li> </ul>
1500	Project travel	<ul style="list-style-type: none"> <li>• National and international travel and accommodation for project staff and counterparts</li> </ul>
1600	Staff travel	<ul style="list-style-type: none"> <li>• National and international travel and accommodation for UNIDO regular staff</li> </ul>
1700	National project staff	<ul style="list-style-type: none"> <li>• National project staff, both regular/long term and short term assignment, in India or any other developing country where GN-SEC centres are established</li> </ul>
2100	Contracts for services	<ul style="list-style-type: none"> <li>• Contracts with institutions/service providers to undertake specific project assignments, typically expert services for study or alike</li> <li>• Contracts for delivery of specific, predefined STAR services by specific STAR network members or other companies/consortias under open competition</li> </ul>
3000	Training	<ul style="list-style-type: none"> <li>• Costs associated with the development and implementation of a qualification and certification program on solar technologies as well as development and delivery of training and capacity building initiatives, including class room, e-learning, training of trainers, stakeholders consultations, study tours etc.</li> </ul>
4500	Procurement of goods	<ul style="list-style-type: none"> <li>• Costs for procurement of goods – office and communication equipment, goods/equipment that might be required for delivery of STAR services</li> </ul>
5100	Miscellaneous	<ul style="list-style-type: none"> <li>• Other direct costs, particular communications, publishing etc.</li> </ul>

UNIDO will cover GN-SEC project staff from the project funds by part-time basis of current international staff or by applying competitive recruitment or ensuring partly and aiming to ensure equal representation of women and men in the project staffing. Additional national and international experts will be engaged on demand basis. Throughout the project, UNIDO will follow its internal regulations to procure goods and services to provide technical assistance to priority countries under the scope the operational phase of the project.

<sup>13</sup> Including regulations on Full Cost Recovery (AI/2020/06)

UNIDO will facilitate knowledge and technology transfer under the umbrella of the GN-SEC (Global Network of Sustainable Energy Centres). The powerful global south-south multi-stakeholder partnership is coordinated by UNIDO's Energy Department in partnership with various regional economic communities and organizations. The regional centres respond to the urgent need for south-south cooperation and regional capacities to promote inclusive and sustainable energy industries and markets in developing countries in the post-2015 era. The centres enjoy high-level support from the Energy Ministers and respond to the individual needs of the respective national Governments. The network currently comprises of the ECOWAS Centre for Renewable Energy and Energy Efficiency ([www.ecreee.org](http://www.ecreee.org)), the East African Centre for Renewable Energy and Energy Efficiency ([www.eacreee.org](http://www.eacreee.org)), the Southern African Centre for Renewable Energy and Energy Efficiency (SACREEE), the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) for Arab States and the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE), and the ECCAS Centre for Renewable Energy and Energy Efficiency for Central Africa (CEREEAC). The GN-SEC provides a common umbrella to promote south-south cooperation among the centres and regions.

### C.5 Counterpart inputs

The primary counterparts for this STAR C project are the member countries of the ISA developing countries and GN-SEC centres involved in the project. STAR C aims to provide support through the implementation of a capacity building program, qualification and certification, and quality frameworks on solar energy for products and services, considering knowledge dissemination, training, networking, matchmaking, and standardization, to cover the needs and priorities of the countries in order to scale up and accelerate the deployment of solar energy, specifically, photovoltaics and solar thermal.

The ISA member countries are represented through their National Focal Points (NFPs) that officially represent the country's needs and interests to ISA and play a role in steering and overseeing the activities under STAR C.

STAR C delivers its in-country activities through its STAR network members which are institutions located in ISA member countries.

#### C.5.1 National Focal Points

NFPs have been designated by member countries to represent the country's interests to the ISA and are typically representing the line ministry in charge of energy policy and regulations within their country. Within the context of STAR C, NFPs are expected:

- To provide through the ISA Secretariat suggestions for STAR C strategy, activities and operations and review and comment on its achievements globally, including its regional and technical committees and leading up to the ISA assembly; and
- To support the STAR C project and plan and oversight of STAR services within their home country, through support for identification and appraisal of potential STAR network members, contribution to planning and review of priority STAR services for the country, participation in key public initiatives of STAR network members and advocacy for activities and achievements of STAR C in the country.

ISA may from time to time provide resources to NFIs to deliver STAR C services through ISA budget. The STAR C will be also supported by the National Focal Institutions (NFIs) established by the various GN-SEC centres.

#### C.5.2 STAR C Network Members

The STAR network members will be established institutions, organisations or initiatives that will be identified and accredited on the basis of their demonstrated expert knowledge and experience in one

or more solar technology and applications within their home country or developing countries of coverage.

The STAR C network members are expected to provide following inputs towards delivery of STAR services:

- Avail, as appropriate to and required for the specific STAR services, their suitably qualified staff and their institution's accumulated formal and tacit knowledge, best practices and experiences on solar deployment within the country;
- Mobilize and expand their – national – networks with government, technical institutions, private and financial sectors, civil society organisations, etc., to convene relevant solar sector stakeholders into a national solar deployment ecosystem.

GN-SEC centres involved in the project *may* from time to time receive some funding support under contract through UNIDO from this STAR C project to cover their expenses for specific, prior agreed STAR C services within their home country and/or countries of coverage. AEE Intec (Institute for Sustainable Technologies founded in 1988 as a non-university research institute, based in Graz, Austria) which has supported the preparatory phase of the project will provide support particularly with regard to the implementation of the solar thermal components. AEE Intec is developing the initial baseline and needs assessment, as well as the development of a regional model qualification and certification framework under the scope of the STAR C

## D. Coordination, Monitoring, and Reporting

### D.1: Project Coordination and Management

#### D.1.1 Legal status

The implementation of the STAR C Project will create a network of knowledge and expertise on solar energy deployment captures and disseminates globally available best practices in all aspects of solar energy deployment, through the implementation of a comprehensive program for capacity building, qualification and certification, and quality frameworks for products and services, considering knowledge dissemination, training, networking, standardization and matchmaking. With such knowledge and background, the network members would be in a premium position to deliver solar technology services beyond this STAR C project.

The STAR C Project demonstrates local ownership and will work according to the local rules under the umbrella of ISA and UNIDO policy framework. Coordination between ISA and UNIDO will be based on the signed Trust Fund Agreement and annually approved by the Supervisory Committee budget and workplans.

The day to day management of the project will be carried out by the Project Management Unit (PMU) at ISA (based in Delhi) and UNIDO STAR C Management Unit based in Vienna, with support of the UNIDO Regional Office in New Delhi, involving the Embassy of France when required. The PMU at ISA and the UNIDO STAR C Management Unit will work in close coordination by regular meetings to be established once the operational phase initiates, involving the Embassy of France when relevant.

The PMU of STAR C at ISA will be hosted within the ISA Secretariat, and will be operating from Delhi. It will have a technical mandate and action- and service-oriented operations.

UNIDO STAR C Management Unit will support the setup and operationalization of the STAR C Project and network. The UNIDO team will work on a part-time basis on the project and comprises the GN-SEC coordinator (project manager), project administrator, project associate and project assistant.

The governance set-up of the STAR C Project reflects the principles of maximizing the impact, avoiding duplication of efforts, strengthening and up-scaling of already existing local capacities. PMU at ISA will

be in charge of country basis activities while UNIDO STAR C Management Unit will specially cover the regional outline.

#### D.1.2 Institutional Structure of the STAR C Project

The institutional structure of the STAR C Project includes:

- The Supervisory Committee (SC) composed of the Director General of ISA, the Director of the Energy Department of UNIDO, and the representative of the Government of France, and other potential donors who might support the STAR C project Supervisory Committee.
- STAR C Project Management Unit, composed of technical teams at ISA and UNIDO with participation of the Embassy of France in India, GN-SEC centres and National Focal Points in ISA developing countries, and other key partners.

The Project Management Unit, consisting of STAR C PMU based in the ISA Secretariat, Delhi and UNIDO STAR C Management Unit, based in Vienna.

The STAR C Project is governed by the SC and if required it will be supported by the STAR C Project Management Unit, which has an advisory and technical role.

The SC will meet at least once a year in virtual or physical form. While the PMU will hold regular meetings every three months as stated in Annex 6. Also, it will be held back-to-back the SC meeting. Figure 5 shows the proposed functional structure of the STAR C Project with the main functions of the key institutional elements.

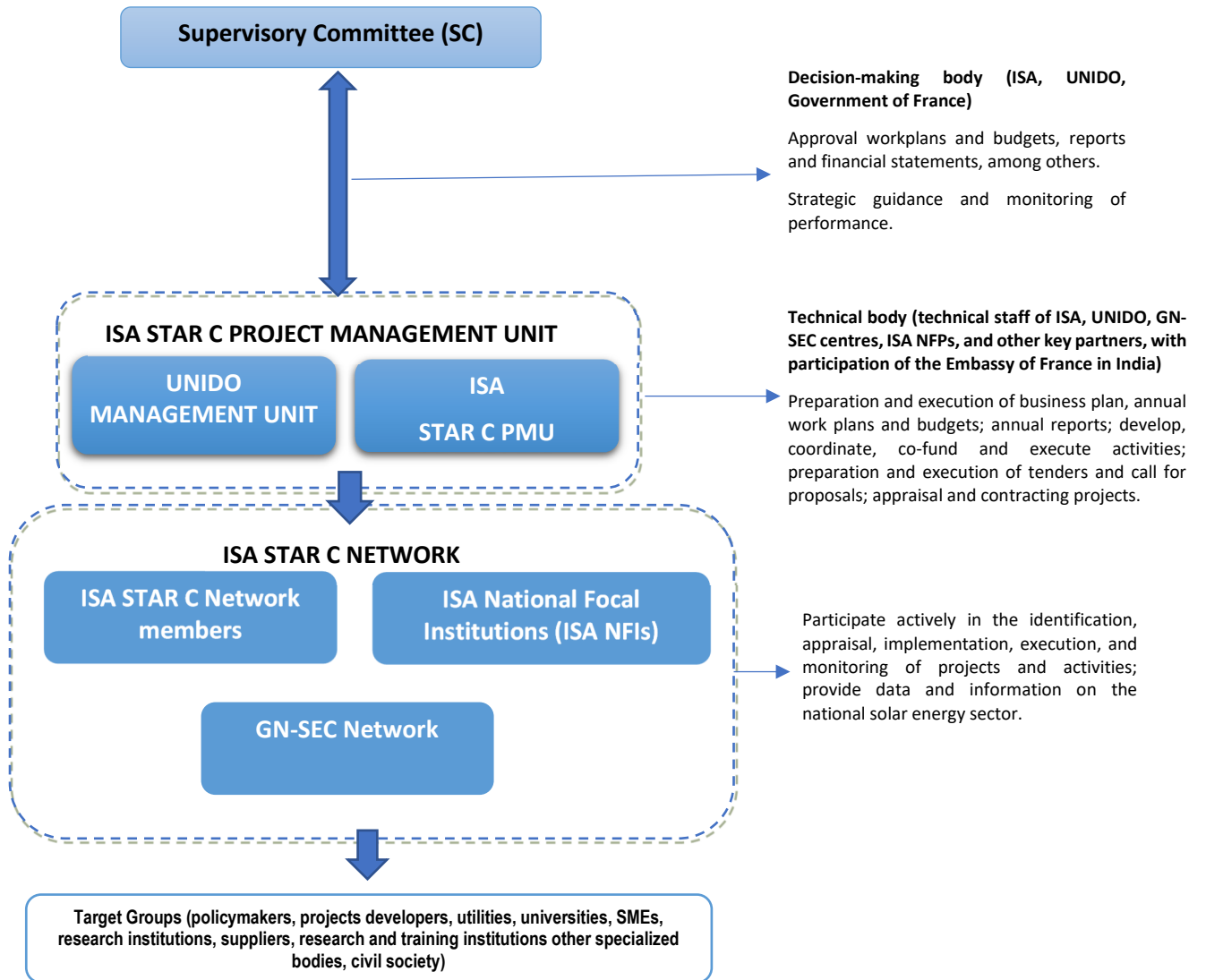
Relevant regulations regarding ethical conduct of all project personnel and committees' members will be developed based on relevant ISA and UNIDO<sup>14</sup> regulations. Project personnel will have to adhere to the regulations.

Most of the activities shall be coordinated by the UNIDO PMU of the STAR C Project, in coordination with the PMU of the project at ISA, and international, regional and national institutions which have already a wealth of experience in specific solar energy sub-sector (e.g. associations, universities and research institutions).

PMU of the STAR C project at ISA will be in charge of knowledge creation with close coordination to the GN-SEC centres and National Focal Points, to keep updating needs assessment and work on the scalability of the project.

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14 UNIDO/DGB/(M).115 CODE OF ETHICAL CONDUCT



**Figure 5: STAR C project institutional structure**

### ***The Supervisory Committee (SC)***

The SC is the highest decision-making body. It will consist of the Government of France, ISA and UNIDO as well as other potential donors (core partners<sup>15</sup> as applicable). The SC decides in consensus. Based on agreement from all parties, and according to the non-objection principle, and to granting sufficient upfront time, certain minor decisions can be confirmed and agreed to by e-mail within the below listed functions. A participation of at least 40% women in the SC will be pursued. The functions of the SC are as follows:

- decides in consensus and by written procedure, if necessary;
- offers strategic guidance to the STAR C Project Management Unit at ISA and UNIDO Management Unit to meet the objectives;
- proposes strategic flagship programs;
- approves STAR C Project's annual workplan and budget after review by the TC;
- monitors the progress and performance of the STAR C Project;
- approves the annual status reports, work plans, audited financial statements, evaluations and other technical documents;
- approve external audit reports;
- approve evaluations and management responses; and
- contributes to STAR C Project's visibility in ISA countries and fosters its promotion in non-ISA members.
- suggests improvements in the organizational, administrative, quality and technical appraisal framework of the project;
- reviews major program documents, policy documents and reports and give comments; and
- assists in fund raising activities for its technical program and raise visibility on regional and international levels.

### ***The STAR C Project Management Unit (STAR C PMU)***

It comprises of the PMU at ISA based in Delhi and UNIDO Management Unit based in Vienna with participation of the Embassy of France in India. Both will work in close coordination.

ISA will establish a project management team at ISA Secretariat and junior staff will be hired at local level. It is envisaged that at least 40% of the technical and administrative professional core staff is female.

The UNIDO Management Unit will be established within the GN-SEC team, based at UNIDO Headquarters in Vienna. UNIDO will provide technical and institution capacity building services and peer to peer support for the operational phase of the Project. The UNIDO team will work on a part-time basis on the project and comprises the GN-SEC coordinator (project manager), project administrator, project associate and project assistant. Additionally, depending on fund available national and international staff will be hired as needed for the implementation of project activities.

The main role of the STAR C PMU will be to implement the project activities in line with the approved workplan in coordination with the SC. The STAR PMU will be responsible for the implementation of the mandate of the Project and the work plan as approved by the SC. The STAR C PMU will also lead the funds mobilization efforts of the Project with support of the SC. The general responsibilities of the STAR C PMU are:

- develop the annual work plans, status reports and financial reports in cooperation with GN-SEC centres and the ISA National Focal Institutions (NFIs) and network of partners;
- pro-active fundraising;

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<sup>15</sup> Core partners are defined as partners who support the technical and institutional (administrative budget) operations of the ISA STAR Project and its Coordination Department through considerable long-term contributions.



- implement activities approved in the annual work plan in cooperation with the GNSEC centres, ISA National Focal Institutions (NFIs) and network of partners;
- implement the decisions of the SC;
- monitor the progress of the implementation of the annual workplans;
- execute the global STAR C activities (training, knowledge, networking and others);
- organize the meetings of the SC;
- keep an overview on relevance, effectiveness, efficiency and sustainability of the Project;
- plan, coordinate and review the STAR services' delivery by Network Members in ISA member countries, and the GN-SEC centres involved in the project;
- compile regularly information and data provided by the GN-SEC centres, ISA National Focal Institutions (NFIs) and network of partners.

Regarding technical support, the role of the STAR C PMU will be to:

- strengthen the regional network of the GN-SEC centres, ISA National Focal Institutions (NFIs) and network of partners;
- recruit qualified administrative and technical staff; strengthen the capacities of staff and select international seconded experts;
- coordinate regularly with the core partners of the Project;
- develop, appraise, implement and monitor the actions;
- undertake fundraising activities and contributes to proposal preparation, supported by UNIDO, GNSEC and other potential partners (e.g. WB, IRENA, CTCN and others);
- develop the quality, appraisal and project cycle management framework for activities to be co-funded and implemented;
- prepare and execute procurements and call for proposals; and
- sign contracts and monitor projects and assignments.

The STAR C PMU will also be responsible for communication and outreach to stakeholders.

The STAR C PMU, on as needed basis, will contract out some of the substantive work associated with its assigned STAR services, such as development and delivery of certification and qualification frameworks, skills training modules and knowledge products. ISA and UNIDO will apply their own established processes and administrative procedures (e.g. recruitment, travel, administration, finance, legal, etc.) to ensure a lean and agile implementation and execution of the STAR C Project.

The STAR C PMU will establish a special focal point for gender issues. The focal point will be responsible to mainstream gender throughout the Project as well as throughout the technical program portfolio.

#### ***ISA National Focal Institutions (ISA NFIs)***

STAR C PMU will establish a strong network of ISA National Focal Institutions (NFIs) which interlinks the STAR C Project with ISA Member States, and countries from regions covered by the GN-SEC centres involved in the project. The STAR C PMU will work individually and – as appropriate - collectively with the ISA National Focal Institutions of the ISA member countries to plan and oversee STAR activities in the country, including identification and assessment of potential network members and programming and reviewing specific STAR services to be delivered by these network members. The NFIs would be responsible for:

- participating actively in the identification, appraisal, implementation and monitoring of projects and activities of the STAR C project;
- providing data and information on the national solar energy sector;
- coordinating the STAR C project's activities in their countries.

The ISA NFIs might be supported by the GN-SEC NFIs.



### ***Network of partners***

During implementation for the STAR C project a comprehensive network of international, regional and national institutions will be established. These will contribute with a wealth of experience in specific solar energy sub-sector (e.g. associations, universities and research institutions) – collectively regarded as network partner.

The envisaged structure of relationship between the STAR C project (through the STAR C PMU) and the ISA National Focal Institutions (NFIs), GN-SEC centres and other stakeholders in member states will, to a large extent, depend on the specific activity. As an example, in the case of training programmes, the STAR C PMU would subcontract a specific institution or centre of excellence to develop the curricula and modules under the thematic clusters on solar energy as stated in Section B3 and Annex 11.

### ***Strategy for the engagement of partners***

The STAR C PMU, based on its own knowledge, will also carry out an inventory of all ISA NFIs and agencies including universities, research centres, certification bodies, advocacy groups and national professional associations working in solar energy as its area of mandate. The choice of which institution or national body will act as a collaborator in the implementation of specific projects will be determined on a case-by-case basis. Given the significant differences across partner states in terms of level of capacity development, needs and resource endowments, the STAR C PMU will be mindful of this and will adopt a differentiated approach to each country in the development and implementation of its programmes.

At the global level, the STAR C PMU will closely cooperate with international institutions such as AEE INTEC (Institute for Sustainable Technologies), Research Centre on Energy, Environment and Technology (CIEMAT), Fraunhofer-Gesellschaft, Solar Energy Institute (IESUPM) and National Renewable Energy Laboratory, International Renewable Energy Agency (IRENA), Renewable Energy and Energy Efficiency Partnership (REEEP), REN21, Lighting Global Africa and Lighting Global Asia, the Sustainable Renewables Risk Mitigation Initiative (SRMI) from the World Bank, SIDS DOCK, Reiner Lemoine Institut, APUA centres of excellence, SEE4ALL, Clean Energy Investment Accelerator, the Energy Transition Accelerator Financing, among others. The STAR C PMU will collaborate with similar international organizations in areas of mutual interest like capacity building, technology transfer and knowledge management. It is also expected that the STAR C Project will create a multi-dimensional cooperation between ISA member countries and non-ISA members in order to share experiences and develop partnerships.

## **D.2 Project Monitoring and Evaluation**

The STAR C operates under the guidance of established Supervisory Committee (as described in section D.1).

The STAR C Project will tackle the elaboration of a comprehensive and transparent system of Key Performance Indicators (KPIs) to monitor the activities and outputs, with each KPI being specific to only one of the project outputs. The PMU will then collect data for each and provide updates on the KPIs in a project dashboard as well as through inclusion in the narrative management reports. Project monitoring and evaluation will include specific gender mainstreaming aspects as indicated in previous sections. Refer to Section B.3.4, Output 4.3. and B.5.1. for further detailed information.

## D.3 Project Reporting

The STAR C PMU will prepare annual<sup>16</sup> reports on STAR C Project, covering main activities and outcomes during subsequent calendar years.

Furthermore, STAR C PMU will prepare narrative progress reports (see section B.3.4, output 4.3), which provide detailed progress per output, supported by progress against agreed KPIs. These management reports will also expand on challenges encountered, suggest management responses and propose updates in strategy and work planning. These management reports will be presented and discussed with the Supervisory Committee.

- ISA will be a recipient of funds from the Government of France (1,000,000 euros) and will transfer them partly to UNIDO (600.000 euros) as stated in Annex 6.
- UNIDO will provide financial reporting on relevant outcomes/outputs spending (financial statements) to ISA on a yearly basis, and six months within the expiration or termination of a Trust Fund Agreement between both organizations as established in the preparatory phase (Annex 5). Further details under the cooperation shall be incorporated and agreed in a Trust Fund Agreement for the conservative scenario of the project, following similar rules stated in Annex 6.
- On the other hand, ISA will report on the total expenditures to the Government of France. ISA will provide to the Donor: annual financial statement showing incomes and expenditures for the year; a final financial statement within six months of termination or expiration of the agreement; and, a final report every six months as stated in Annex 6.

Should financial contribution be made by another donor aside of ISA, additional arrangements will be done following standard UNIDO procedures. ISA will compile annual financial reports on the funding provided by each of the donors for their respective contributions to STAR C Project. These financial reports will follow the standard accounting years of the institution. The STAR PMU will compile an aggregate financial report for the STAR C Project as a whole.

## E. Budget

### E.1 Financial planning

Project budget is based on the donor provided funding for STAR C project. It is anticipated, that based on the approved workplan the PMU will carry out fundraising activities in order to obtain additional funding for the envisaged project activities. Therefore, the project document distinguishes between a conservative and optimistic budget scenario. The funding for the conservative scenario is already available at project start:

**1,000,000 EUR from the Government of France for the main project activities during project operational phase: 400,000 euros under the administration of ISA and 600,000 euros to be transferred from ISA to UNIDO.**

The project funds will be managed at UNIDO Headquarters under the GN-SEC program. The UNIDO office in India will act as a liaison office to ISA as required.

Based on the proposed scope of the project and envisaged outputs and activities the funding for the project requires a minimum financial resource of 1,000,000 EUR to carry out the activities in the limited geographical scope under a conservative scenario. To increase the impact of the project and extend geographical scope a budget of 2,775,000 EUR would be necessary under the optimistic scenario. This will allow the involvement of more GN-SEC centres and regions. This has been reflected in the project budget with two project scenarios:

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<sup>16</sup> Proposed timeline is October each year

1. Conservative scenario (1,000,000 EUR)– with limited scope of global activities, and country activities in three selected countries (to be jointly decided upon with the donors during the operational phase), to be carried out in 2.5 years.
2. Optimistic scenario (2,775,000 EUR)– with maximum scope of global activities in 5 years. Further work and involvement of additional countries will depend on funds availability.

The proposed project budget in two scenarios is given in the section E.3 (detailed budget in Annex 13).

## E.2 Financial flows

*For the conservative scenario:* the financial setup for the project assumes that the Government of France will provide the funds (1,000,000 EUR) to ISA based on the agreement (see Annex 6) and project document. Then, ISA will transfer the agreed funds (600,000 EUR) to UNIDO based on a new Trust Fund agreement between both organizations that will regulate among other things, the implementation of the funds and payment schedule, also taking into account the Trust Fund Agreement between France and ISA (Annex 6). To allow UNIDO to kick-start the project activities, an upfront payment of at least 70% shall be provided to UNIDO at the beginning.

*Any modification or amendment of the Agreement shall be made in writing with the consent of both Parties. Where changes to the Project Document and its budget do not affect the main purpose of the Project, such as its objectives, strategy and priority areas, and provided the financial impact of such changes is limited to a transfer within a single budget output or a transfer between budget outputs involving a variation of 15 percent or less of the amount originally agreed, UNIDO may affect such changes unilaterally.*

*For the optimistic scenario:* If the project under conservative scenario, through implementation of its project activities mobilise additional funds, ISA in consultation with UNIDO will formulate activities for implementation in consultation with the SC. In case UNIDO mobilises funds from donors on its own, then the funds will be managed according to UNIDO financial rules and regulations and incurred by UNIDO to implement the project, based on the approved work plan in consultation with the SC. However, all this shall be regulated through an agreement as indicated above.

UNIDO might channel funding through the involved GN-SEC centres (through a waiver from competition) to facilitate the implementation of envisaged activities.

### E.3 Project budget

As indicated above, **UNIDO will report to ISA and France in line with the conservative budget scenario and project outcomes 1, 2, 3 and 4 as established in Table 15, categorized as per UNIDO's internal budget lines** (defined in Table 14).<sup>17</sup> UNIDO does not report on any co-funding operated by other partners.

**Table 15: Project budget per outcome for conservative (2.5 years) of UNIDO – Budget to be reported by UNIDO**

Budget Lines	Description	Y1	Y2	Y3	Total (conservative scenario)
<b>OUTCOME 1: Improved quality and certification frameworks for PV and solar thermal products and services</b>					
1100	Staff & Intern Consultants	24,000	12,000	6,000	42,000
1101	Staff & Intern Consultants	9,500			9,500
1500	Local travel	-			-
1600	Staff Travel	3,600	2,000		5,600
1700	Nat.Consult./Staff	6,000	2,000		8,000
2100	Contractual Services	50,028	24,000	14,000	88,028
3000	Train/Fellowship/Study	-			-
3500	International Meetings	-			-
4500	Equipment	14,400			14,400
5100	Other Direct Costs	-			-
7100	Contingencies	-			-
<b>Sub-Total OUTCOME 1</b>		<b>107,528</b>	<b>40,000</b>	<b>20,000</b>	<b>167,528</b>
<b>OUTCOME 2: Enhanced capacities of institutions to offer certified quality solar curricula and training</b>					
1100	Staff & Intern Consultants	21,000	11,000		32,000
1101	Staff & Intern Consultants	9,500			9,500
1500	Local travel	2,100	1,100		3,200
1600	Staff Travel	2,100	1,100		3,200
1700	Nat.Consult./Staff	6,300	3,300		9,600
2100	Contractual Services	52,500	33,000		85,500
3000	Train/Fellowship/Study	5,250	2,750		8,000
3500	International Meetings	5,250	2,750		8,000
4500	Equipment	-			-
5100	Other Direct Costs	-			-
7100	Contingencies	-			-
<b>Sub-Total OUTCOME 2</b>		<b>104,000</b>	<b>55,000</b>	<b>-</b>	<b>159,000</b>
<b>OUTCOME 3: Increased impact of solar networks and knowledge management systems</b>					
1100	Staff & Intern Consultants	14,300	4,667		18,967
1101	Staff & Intern Consultants	556			556
1500	Local travel	-	1,556		1,556
1600	Staff Travel	-			-
1700	Nat.Consult./Staff	-			-
2100	Contractual Services	12,600	9,334	9,000	30,934
3000	Train/Fellowship/Study	-			-
3500	International Meetings	1,824			1,824

<sup>17</sup> The provided ISA grant to UNIDO is flexible and will allow shifts between budget lines within the four outcome areas without approval of the donor up to a threshold of 10% (please note that outcomes are defined as outputs in the UNIDO SAP budget system). Budget shifts between outcome areas require approval by the donor. In line with the UNIDO cost-recovery policy, another Euro 24,583 was included for technical services under budget line 11.01 in the project budget. No UN levy is charged. To allow UNIDO to kick-start the project activities, an upfront payment of at least 70% shall be provided to UNIDO at the beginning.

4500	Equipment	-			-
5100	Other Direct Costs	-			-
7100	Contingencies	-			-
<b>Sub-Total OUTCOME 3</b>		<b>29,280</b>	<b>15,556</b>	<b>9,000</b>	<b>53,836</b>
<b>OUTCOME 4: Effective STAR-C management and governance structure established and sustained</b>					
1100	Staff & Intern Consultants	54,973	52,154	40,000	147,127
1101	Staff & Intern Consultants	5,027			5,027
1500	Local travel	-			-
1600	Staff Travel	-	13,038	10,000	23,038
1700	Nat.Consult./Staff	-			-
2100	Contractual Services	-			-
3000	Train/Fellowship/Study	-			-
3500	International Meetings	-			-
4500	Equipment	-			-
5100	Other Direct Costs	-			-
7100	Contingencies	-			-
<b>Sub-Total OUTCOME 4</b>		<b>60,000</b>	<b>65,192</b>	<b>50,000</b>	<b>175,192</b>
<b>Total Outcomes (1+2+3+4)</b>		<b>300,807</b>	<b>175,748</b>	<b>79,000</b>	
<b>UNIDO Support Costs (8%)</b>		<b>24,065</b>	<b>14,060</b>	<b>6,320</b>	
<b>Total Costs</b>		<b>324,872</b>	<b>189,808</b>	<b>85,320</b>	
<b>TOTAL BUDGET</b>					<b>555,556</b>
<b>SUPPORT COSTS</b>					<b>44,444</b>
<b>TOTAL BUDGET INCL. SUPPORT COSTS</b>					<b>600,000</b>

Table 16 summarizes the budget for the conservative scenario (2.5 years) of UNIDO based on the Government of France contribution:

**Table 16: Project budget for conservative (2.5 years) of UNIDO - Budget to be reported by UNIDO**

Budget Lines	Description	Y1	Y2	Y3	Total (conservative scenario)
1100	Staff & Intern Consultants	114,273	79,820	46,000	240,093
1101	Staff & Intern Consultants	24,583	-	-	24,583
1500	Local travel	2,100	2,656	-	4,756
1600	Staff Travel	5,700	16,138	10,000	31,838
1700	Nat.Consult./Staff	12,300	5,300	-	17,600
2100	Contractual Services	115,128	66,334	23,000	204,461
3000	Train/Fellowship/Study	5,250	2,750	-	8,000
3500	International Meetings	7,074	2,750	-	9,824
4500	Equipment	14,400	-	-	14,400
5100	Other Direct Costs	-	-	-	-
7100	Contingencies	-	-	-	-
<b>Total</b>		<b>300,807</b>	<b>175,748</b>	<b>79,000</b>	<b>555,556</b>
<b>Support costs (8%)</b>		<b>24,065</b>	<b>14,060</b>	<b>6,320</b>	<b>44,444</b>
<b>Total incl. Support costs</b>		<b>324,872</b>	<b>189,808</b>	<b>85,320</b>	<b>600,000</b>

Similarly, table 17 depicts the budget for the conservative scenario (2.5 years) of ISA based on the Government of France contribution. This budget does not imply any approval at UNIDO:

**Table 17: Project budget for conservative (2.5 years) of ISA (not operated by UNIDO)**

Budget Lines	Description	Y1	Y2	Y3	Total (conservative scenario)
1100	Staff & Intern Consultants	40,350	40,400	-	80,750
1101	Staff & Intern Consultants	-	-	-	-
1500	Local travel	4,500	3,500	-	8,000
1600	Staff Travel	5,500	9,000	3,000	17,500
1700	Nat.Consult./Staff	5,350	5,350	-	10,700
2100	Contractual Services	100,050	99,500	22,370	221,920
3000	Train/Fellowship/Study	-	-	-	-
3500	International Meetings	500	4,000	-	4,500
4500	Equipment	4,000	-	-	4,000
5100	Other Direct Costs	-	-	-	-
7100	Contingencies	10,000	10,000	3,000	23,000
<b>Total</b>		<b>170,250</b>	<b>171,750</b>	<b>28,370</b>	<b>370,370</b>
<b>Support costs (8%)</b>		<b>13,620</b>	<b>13,740</b>	<b>2,270</b>	<b>29,630</b>
<b>Total incl. Support costs</b>		<b>183,870</b>	<b>185,490</b>	<b>30,640</b>	<b>400,000</b>

Finally, table 18 presents the total contribution of the Government of France for the STAR C under the conservative scenario and what is expected to be secured under the optimistic scenario:

- Conservative budget scenario, 2.5 years
- Optimistic budget scenario, 5 years project (As stated in section D.1.2, *the STAR C PMU will also lead the funds mobilization efforts of the Project with support of the SC for the optimistic scenario*)

**Table 18: Project budget for conservative (2.5 years) and optimistic scenario (5 years)**

Outcomes and outputs	Indicative Budget in Euro (conservative scenario, 2.5 years) France contribution		Indicative Budget in Euro (optimistic scenario) (2nd phase of additional 2.5 years in case additional funds are secured through other donors)
	UNIDO Euro	ISA Euro	
<b>OUTCOME I: Improved quality and certification frameworks for PV and solar thermal products and services</b>	167,528	40,000	960,000
Output 1.1 Regional quality framework for solar products established	83,000	20,000	460,000
Output 1.2 Regional quality framework for solar services established	84,528	20,000	460,000
Output 1.3 Regional monitoring and verification system established	-	-	40,000
<b>OUTCOME 2: Enhanced capacities of institutions to offer certified quality solar curricula and training</b>	159,000	130,370	810,000
Output 2.1 Development of regional assessment and implementation framework for solar curricula	71,000	50,000	180,000
Output 2.2 Enhanced quality and accessibility of solar curricula, training materials and tools	88,000	20,370	440,000
Output 2.3 Certified trainings for capacity building institutions and decision-makers (train the trainers)	-	60,000	190,000
<b>OUTCOME 3: Increased impact of solar networks and knowledge management systems</b>	53,836	40,000	704,444
Output 3.1 Strengthen regional solar networks	43,836	20,000	454,444
Output 3.2 Partnerships with international solar networks and programs	-	20,000	150,000

Output 3.3 Establishment of a joint solar knowledge platform (ISA, GN-SEC)	10,000	-	100,000
<b>OUTCOME 4: Effective STAR-C management and governance structure established and sustained</b>	<b>175,192</b>	<b>160,000</b>	<b>95,000</b>
Output 4.1: STAR-C Secretariat staffed and activities are effectively implemented	165,192	150,000	95,000
Output 4.2: STAR-C short-term and long-term planning framework and governance implemented	10,000	10,000	-
Output 4.3: Monitoring and reporting	-	-	-
<b>Total</b>	<b>555,556</b>	<b>370,370</b>	<b>2,569,444</b>
<b>Support costs (8%)</b>	<b>44,444</b>	<b>29,630</b>	<b>205,556</b>
<b>Total Budget incl. support costs</b>	<b>600,000</b>	<b>400,000</b>	<b>2,775,000</b>

The detailed project budget per outcome and duration is provided in Annex 13.

## F. Prior Obligations and Prerequisites

All legacy STAR C obligations made prior to conclusion and signing of this project document are not subject to the provisions of this Project Document. Any liability drawn from previous obligations shall not be the responsibility of UNIDO. Only new STAR C commitments entered into by donors with UNIDO and/or ISA are governed by this Project Document. It shall be noted that UNIDO will not take over and by no means be responsible for any obligations and liabilities raised before the start of UNIDO's contribution to execution of the STAR C project as described in this Project Document.

## G. Legal Context

It is expected that each set of activities to be implemented in the target countries will be governed by the provisions of the Standard Basic Cooperation Agreement concluded between the Government of the recipient country concerned and UNIDO or – in the absence of such an agreement – by one of the following: (i) the Standard Basic Assistance Agreement concluded between the recipient country and UNDP, (ii) the Technical Assistance Agreements concluded between the recipient country and the United Nations and specialized agencies, or (iii) the Basic Terms and Conditions Governing UNIDO Projects.



## Annex 1: Joint Declaration UNIDO – ISA

Log: 183/032018  
Ref: III. IGOs, ISA  
Received: 26.3.2018

Joint Declaration  
by  
H.E. Mr. Upendra Tripathy, Interim Director General of International Solar Alliance (ISA)  
and  
H.E. Mr. Tareq Emtairah, Director of the Department of Energy of the  
United Nations Industrial Development Organization (UNIDO)  
for the Promotion of Solar Energy Globally

WHEREAS the United Nations Industrial Development Organization (UNIDO) is the specialized agency of the United Nations with the primary responsibility in promoting and accelerating inclusive and sustainable industrial development through cooperation on global, regional, and national as well as sectoral levels. UNIDO helps countries, among other things, to increase substantially the share of renewable energy in the global energy mix and to achieve the UN Sustainable Development Goal 7 of providing affordable, reliable, sustainable and modern energy for all by 2030;

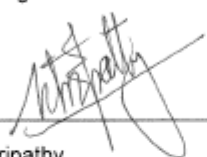
WHEREAS the International Solar Alliance (ISA) is a treaty based international inter-governmental organization which was launched on 30 November 2015, in Paris, France, with Headquarters in India (UN Registration No. 54949). The Alliance is established to collectively address key common challenges to the scaling up of solar energy and to take coordinated action to aggregate demand for finance, technologies, innovation, R&D and capacity building;

COMMITTED to the achievement of the UN Sustainable Development Goals 7 and 9 by promoting affordable, reliable and sustainable energy to achieve universal energy access and inclusive and sustainable industrial development, and recognizing the important role of solar energy technologies in realizing the above goals;

NOW, THEREFORE, on the occasion of the Sustainable Energy Forum for East Africa held in Kigali, Rwanda during 19-21 March 2018, the Interim Director General of ISA and the Director of the Department of Energy of UNIDO jointly declare:

1. Their intention, subject to the programme of work of UNIDO and ISA and in accordance with their respective mandates, rules, regulations and procedures, to cooperate in the following areas:
  - a. Jointly and in conjunction with other parties, develop knowledge networks which will raise awareness and information on the benefits of solar energy in member countries;
  - b. Jointly collate and provide evidence-based advice to member countries on policies scoping, planning, feasibility and practices to create a favourable environment for solar energy;
  - c. Jointly and in conjunction with other parties, strengthen the institutional and technical capacities of the global network of sustainable energy centres (GN-SEC) to provide policy support, capacity building and technical assistance on solar energy applications and energy efficiency, including the recently established East African Centre for Renewable Energy and Energy Efficiency (EACREEE);
  - d. Work together to set up a knowledge exchange mechanism whereby global best practices, successful policy approaches and viable technology options in the field of solar energy applications for energy access and industrial applications can be collected, analysed, distilled and disseminated freely among member countries;

- e. Jointly work towards promoting innovative approaches, training regimes and protocols among member countries, whereby actors, especially women, from government, private sector, civil society and the media can have access to regular and continuous training and skills development programmes, which will enable them to promote solar energy projects and programmes in their countries;
  - f. Jointly promote and support, in conjunction with specialist institutions, the development of financial knowledge and expertise among member countries to mobilise finance for the solar energy sector and to encourage private sector investment in the sector by lowering the associated risks for solar energy projects and programmes, as well as working with existing networks such as the Private Financing Advisory Network (PFAN);
  - g. Jointly encourage and support technology innovations, enterprise development, incubation and educational programmes to promote access to energy services, including through entrepreneurship development with customized business models adapted to local conditions;
  - h. Jointly mobilize key stakeholders for respective Renewable Energy Global Investors Meetings and other fora; and
  - i. Any other area of collaboration in the fields of technical assistance, capacity building and knowledge management as may be mutually agreed upon between the ISA and UNIDO.
2. Their intention to undertake further mutual consultations with a view to concluding an appropriate relationship agreement to institutionalize the partnership, which would be subject to approval in accordance with their respective policies and procedures.
  3. The signatories acknowledge that the present Joint Declaration is not to be construed as a binding document and does not give rise to any form of fiduciary or legal obligation. Any activities that may be conducted under this Joint Declaration are subject to and contingent upon the availability of sufficient staff, funds, and other resources and may require the execution of one or more legally binding instruments which will be separately negotiated and agreed to by the signatories.



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Mr. Upendra Tripathy

Interim Director General of ISA

Kigali, Rwanda 19 March 2018



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Mr. Tareq Emtairah

Director, Department of Energy of UNIDO

Kigali, Rwanda 19 March 2018

## Annex 2: Letters of Exchange UNIDO – ISA



**UPENDRA TRIPATHY, IAS (Retd)**  
**Director General**

**DO. No PS/DG/1/1/2019-ISA**

**Dated the October 16, 2019**

**Subject: Letter of request to support ISA STAR-C programme.**

Dear René,

The International Solar Alliance (ISA) presents its compliments to UNIDO and has the honour to thank UNIDO for its support with the ISA STAR-C programme.

2. As you know, the STAR-C programme launched during the First Assembly of the ISA in October 2018, and is aimed at supporting our Members through capacity building, as well as through support for R&D and innovation.

3. Since the First Assembly, and building on an initial assessment of the capacity needs as well as of the existing training and R&D infrastructure in ISA Members, the ISA Secretariat has been developing the concept note and structure envisaged for this programme and consulting with Members and partners on this.

4. We have been very appreciative of the support provided by UNIDO to date and I understand my officers have held productive discussions with you in recent months. And I would like to thank UNIDO for the constructive input into the draft concept note circulated by the Secretariat.

5. In particular, this engagement has very much highlighted the unique expertise that UNIDO has in this regard, given its experience in establishing the Global Network of Regional Sustainable Energy Centres in partnership with sub-regional economic communities.

6. Recognising on this expertise, we would like to request UNIDO to support the ISA Secretariat to commence implementation of the STAR-C programme, over an initial period of 4 to 5 years. I anticipate that this support would include the development of a roadmap and associated workplans and budgets, joint fundraising activities, and the creation of a STAR-C support unit, housed within the ISA Secretariat, to coordinate and manage the STAR-C programme. I suggest this could be facilitated through a joint ISA-UNIDO project, and request your assistance in initiating such a project. Should UNIDO be willing to support the ISA with this project, I would suggest that we move quickly to convene an informal discussion on the STAR-C programme at the Second Assembly later this month. This discussion could brief ISA Members and partners, and other interested stakeholders, on the work and direction envisaged, and provide an opportunity for those interested parties to brainstorm ideas in this regard.

**International Solar Alliance**

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 / International Solar Alliance |  @isaalliance



7. I have asked Ms Cécile Martin-Phipps, Director – Strategy and Communication, and Ms Fiona Bourne, Director – Governance, to work with UNIDO to progress this very important project, and they are the ISA contacts in the first instance.

8. The ISA avails itself of the opportunity to renew to UNIDO the assurances of its highest consideration.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Upendra Tripathy', is written over a faint, larger version of the signature. Below the signature, the name '(Upendra Tripathy)' is printed in a black, sans-serif font.

**Mr. René Van Berkel**  
UNIDO representative in India  
UNIDO  
UN House, 55 Lodi Estate  
New Delhi – 110003, India

**International Solar Alliance**

National Institute of Solar Energy Campus, Gurugram - 122 003, India  
www.isaalliance.org | +91 124 285 3068/69/70 | info@isaalliance.org

f /International Solar Alliance | @isolaralliance





UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION  
Regional Office in India

22<sup>nd</sup> October 2019

Mr Upendra Tripathy  
Director General  
International Solar Alliance

Subject: Support to STAR C Programme  
Your reference: PS/DG/1/1/2019-ISA, dated 17 October 2019

Dear Mr Tripathy

I have the pleasure to refer to your letter of 17<sup>th</sup> October 2019 requesting the support of the United Nations Industrial Development Organization (UNIDO) towards the operationalization, establishment and servicing of the network of Solar Technology Application and Research Centres (STAR C) under the International Solar Alliance (ISA).

UNIDO understands that STAR C programme intends to foster capacity building, applied research and standardization on technology, policy, financial and other aspects of large-scale deployment of diverse solar technologies in its Member Countries. These are areas of interest, expertise and experience of UNIDO, including through the UNIDO-led Global Network of Sustainable Energy Centres (GN SEC).

In view of the March 2018 Joint UNIDO ISA Declaration, UNIDO welcomes your request to support the establishment of the STAR C network. I am therefore pleased to confirm UNIDO's interest to deliver such support and assist the ISA with firstly developing a detailed plan and programme of activities for the STAR C network and secondly operating the network support unit from within the ISA secretariat for an initial period of 4 or 5 years. The UNIDO support remains conditional on successful joint mobilization of funding.

I will be available to discuss the STAR C programme with ISA Secretariat and representatives of Member States and other stakeholders during or in connection with the upcoming ISA Second Assembly, which I will attend jointly with my colleague, Mr Tomoo Machiba, UNIDO Deputy Director of the Climate Technology Centre and Network (CTCN). We would expect to have thereafter a clear roadmap for establishment of the STAR C network and UNIDO's possible roles therein.

We look forward to working with the ISA Secretariat and Member States on operationalizing the STAR C network.

With best regards

A handwritten signature in blue ink, appearing to read "Rene Van Berkel".

Rene Van Berkel  
UNIDO Representative  
UNIDO Regional Office in India

---

UN House, 55 Lodi Estate, New Delhi 110003  
Tel: +91 11 46532333 Fax: +91 11 24620913 Email: [office.india@unido.org](mailto:office.india@unido.org) Website: [www.unido.org](http://www.unido.org)

## Annex 3: Letter – Second Assembly of the International Solar Alliance



**UPENDRA TRIPATHY, IAS (Retd)**  
**Director General**

**DO. No. 03/08/2019-ISA**

**7<sup>th</sup> November 2019**

**Subject: Second Assembly of the International Solar Alliance - regarding**

Dear Mr. Van Berkel,

Please accept my personal compliments as also those on behalf of the International Solar Alliance.

2. Foremost, I would like to thank the United Nations Industrial Development Organisation (UNIDO) for participating in the Second Assembly. It was a great honour to have you present at the event. I would like to express my appreciation and gratitude to the UNIDO for the support and assistance to the ISA in its formative years. The complementarity of the strengths and strategies of the two organisations presents an opportunity to intensify and support global efforts for eradicating Energy poverty and fostering sustainable & equitable development through low-cost and affordable Solar Energy applications. I am optimistic that the partnership between our two organisations is a momentous step in realising the objective of climate mitigation as well as energy security, across the globe, with Solar Energy. I am confident that the experience and technical expertise of UNIDO in establishing Renewable Energy and Energy efficiency centres across several developing countries would be critical to the achievement of the objectives of the ISA.

3. I would also like to congratulate UNIDO for its support in operationalising the ISA i-STARC programme. I believe that i-STARC programme embodies the essence of ISA’s role in the Solar Energy sector. The centres will be vibrant centres of innovation and capacity in ISA Member Countries that are also expected to provide logistical support to Member Countries in developing and implementing projects. UNIDO’s experience would be immensely valuable in transforming these regional centres into global centres of excellence.

4. I would again like to express my gratitude to the UNIDO for its unwavering support to the cause of renewable energy, climate change action, and to the International Solar Alliance. I look forward to a productive partnership and look forward to hosting you again for other ISA events and the Third Assembly.

**International Solar Alliance**

National Institute of Solar Energy Campus, Gurugram - 122 003, India  
[www.isolaralliance.org](http://www.isolaralliance.org) | +91 124 285 3008/69/30 | [info@isolaralliance.org](mailto:info@isolaralliance.org)

 / International Solar Alliance |  @isolaralliance



I avail myself of this opportunity to renew to the United Nations Industrial Development Organisation, the assurances of my highest consideration.

Yours sincerely,



(Upendra Tripathy)

Mr. Rene Van Berkel  
UNIDO Representative  
Email: [R.VANBERKEL@unido.org](mailto:R.VANBERKEL@unido.org)

Copy to:

Mr. Tanao Machiba  
Deputy Director,  
CCTN  
Email: [t.machiba@unido.org](mailto:t.machiba@unido.org)

**International Solar Alliance**

National Institute of Solar Energy Campus, Gurugram - 122 003, India  
[www.solaralliance.org](http://www.solaralliance.org) | +91 124 285 3068/69/300 | [info@solaralliance.org](mailto:info@solaralliance.org)

  / International Solar Alliance |  @solaralliance



## Annex 4: Summary Stakeholders Consultation Meeting

This document is attached to the Project document in a separate Pdf. file.

## Annex 5: Trust Fund Agreement ISA – UNIDO. Preparatory assistance

**TRUST FUND AGREEMENT  
BETWEEN  
THE UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION  
AND  
THE INTERNATIONAL SOLAR ALLIANCE**

WHEREAS the United Nations Industrial Development Organization (hereinafter "UNIDO") and International Solar Alliance (ISA) (hereinafter "the Donor") have agreed to cooperate in the implementation of a preparatory assistance for a global Project entitled "International Solar Alliance Solar Technology and Application Resource Centres (ISA STAR C) – Preparatory Assistance" (hereinafter referred to as "the Project"), which is more fully described in the preparatory assistance document No. 190370, and which is attached as Annex A hereto and made an integral part hereof;

WHEREAS the Donor has informed UNIDO of its willingness to contribute funds to meet the costs of the Project;

WHEREAS it has been agreed between UNIDO and the Donor that UNIDO shall be responsible under the terms of this Agreement and the UNIDO financial regulations and rules for the management of the funds contributed by the Donor for the Project;

NOW THEREFORE, UNIDO and the Donor hereby agree as follows:

**Article I**

1. the Donor shall, in the manner referred to in paragraph 2 below, place at the disposal of UNIDO a sum estimated at US\$ 53,900 (including 7 % programme support costs), and UNIDO shall use such funds to meet the costs of the Project, including programme support costs.

2. The Donor shall, upon signature of this Agreement, deposit the aforesaid funds, in convertible currencies of unrestricted use, to the UNIDO account:

JPMORGAN CHASE  
UNIDO/IDF Account No. 949-2-416442  
ABA No.: 021 000 021  
Swift: CHASUS33  
277 Park Avenue, 23rd Floor  
New York, N.Y. 10172-0003, USA

quoting project number 190370

3. UNIDO shall establish a trust fund under its financial regulations and rules for the receipt and administration of the aforesaid funds, including interest accruing.

4. The trust fund and the activities financed therefrom shall be administered by UNIDO in accordance with its applicable regulations, rules and administrative instructions or

directives. Accordingly, personnel shall be engaged and administered; equipment, supplies and services purchased; and contracts entered into in accordance with the provisions of such regulations, rules, and directives.

5. All financial accounts and statements shall be expressed in United States dollars and there shall be no accounting or reporting in other currencies. For the purpose of recording receipts and/or payments, all transactions shall be converted into United States dollars at the official United Nations accounting rate of exchange applicable on the date of receipt and/or payment.

#### **Article II**

The trust fund shall be utilized by UNIDO for the purpose of meeting the actual costs of the preparatory assistance document at Annex A and to finance the programme support services provided by UNIDO in the implementation of the project.

#### **Article III**

1. UNIDO shall commence and continue to conduct operations under this Agreement upon receipt of a copy of this Agreement, signed by both Parties, and upon receipt of sufficient funds in accordance with Article I.

2. The Donor undertakes to meet the actual costs of the services specified in the preparatory assistance document in Annex A, and UNIDO undertakes not to make any commitments for services not specified in the preparatory assistance document without the approval, in writing, of the Donor.

3. Any modification or amendment of the Agreement shall be made in writing with the consent of both Parties. Where changes to the Project Document and its budget do not affect the main purpose of the Project, such as its objectives, strategy and priority areas, and provided the financial impact of such changes is limited to a transfer within a single budget output or a transfer between budget outputs involving a variation of 15 percent or less of the amount originally agreed, UNIDO may effect such changes unilaterally.

#### **Article IV**

1. Ownership of equipment, materials, supplies and all other property financed from this trust fund shall vest in UNIDO. Unless otherwise provided in the preparatory assistance document, following operational completion of the Project, ownership of equipment, of materials and supplies, as well as other property necessary for operation of the Project, shall be transferred to the Donor or to an entity nominated by it.

2. The ownership of intellectual property rights related to the activities funded by the donor ("Activities"), including the reports and other documents relating to it (the "Results"), will be agreed upon by the parties. In case the intellectual property rights to the Results are owned jointly by the parties, each of the parties shall be free to use, modify, publish, translate and create any derivative works from such Results, as they wish, for their official purposes. Where intellectual property rights related to the



Activities are owned exclusively by UNIDO or the Donor, both Parties shall have the right to use the Results free of royalty or any charge of similar nature.

**Article V**

Evaluation of the activities financed from this trust fund shall be undertaken in accordance with the provisions contained in Annex A.

**Article VI**

The trust fund shall be subject exclusively to the internal and external auditing procedures laid down in the financial regulations, rules and administrative instructions and directives of UNIDO.

**Article VII**

In addition to any reports specified in Annex A, UNIDO shall provide the Donor with the following statements and reports in the format normally followed by UNIDO for accounting and financial reporting:

- (a) An annual financial statement showing income, expenditures for the year, and assets and liabilities as of 31 December with respect to the funds provided by the Donor;
- (b) A final financial statement within six months of termination or expiration of the Agreement.

**Article VIII**

UNIDO shall notify the Donor when the activities for which the trust fund was established have been completed. The date of such notification shall be deemed to be the date of operational completion of the Project. This Agreement shall continue in force for the purposes stated in Article X.

**Article IX**

This Agreement may be terminated by either party on 30 days written notice to the other party, subject to the continuance in force of Article X for the purposes stated therein.

**Article X**

On operational completion of the Project as specified in Article VIII, or termination of this Agreement as specified in Article IX, the trust fund shall remain open until all expenditures incurred by UNIDO have been satisfied. Any balance due to UNIDO

under Article III shall be charged by UNIDO to the trust fund and the Donor will reimburse UNIDO for any negative balance in the trust fund.

Upon submission of a final financial statement in accordance with Article VII (b), any surplus remaining in the trust fund shall be returned to the Donor or disposed of as requested by the Donor.

**Article XI**

The following addresses are specified for the purpose of this Agreement:

(a) For ISA:  
Director General  
International Solar Alliance Secretariat  
Surya Bhawan,  
National Institute of Solar Energy Campus  
Gwal Pahari, Faridabad-Gurugram Road  
Gurugram, Haryana – 122003, India  
Email: amathur@isolaralliance.org

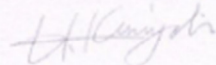
(b) For UNIDO:  
Deputy to the Director General  
Office of the Deputy to the Director General  
P.O. Box 300  
Vienna International Centre  
A-1400 Vienna, Austria  
Telephone: (+43) 1 26026-3470  
Email: ddg@unido.org

**Article XII**

This Agreement shall enter into force upon signature.

IN WITNESS WHEREOF, the undersigned, being duly authorized thereto, have signed the present Agreement in two copies in English.

For the United Nations Industrial  
Development Organization:

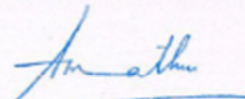


Mr. Hiroshi Kuniyoshi  
Deputy to the Director General

Place: Vienna

Date: 14/06/2021

For the International Solar Alliance



Mr. Ajay Mathur  
Director General

Place: Gurugram, Haryana

Date: 15/06/2021

## Annex 6: Trust Fund Agreement ISA – Government of France

**TRUST FUND AGREEMENT  
BETWEEN  
THE MINISTRY OF EUROPE AND FOREIGN AFFAIRS OF FRANCE  
AND  
THE INTERNATIONAL SOLAR ALLIANCE**

WHEREAS the Ministry of Europe and Foreign Affairs of France (hereinafter "the Donor") and International Solar Alliance (ISA) have agreed to cooperate. Donor will make a direct contribution to ISA's Solar Technology Application Resource Centre (STAR-C) initiative which will be earmarked for implementing capacity building activities to accelerate solar energy deployment in ISA member countries.

WHEREAS the Donor has informed ISA of its willingness to contribute funds;

WHEREAS it has been agreed between ISA and the Donor that ISA shall be responsible under the terms of this Agreement and the ISA financial regulations and rules will apply for the management of the funds contributed by the Donor for the activity;

NOW THEREFORE, ISA and the Donor hereby agree as follows:

**Article I**

1. The Donor shall, in the manner referred to in paragraph 2 below, place at the disposal of ISA euro one million, (including 8 % programme support costs) and ISA shall use such funds to meet the costs of the activities,

2. The Donor shall, upon signature of this Agreement, deposit the aforesaid funds, in convertible currencies of unrestricted use, to the ISA account:

Correspondent Bank : CITIBANK EUROPE PLC DUBLIN  
Correspondent Bank SWIFT Code : CITIE2X  
Beneficiary Bank of EURO: Citibank India  
Beneficiary Bank SWIFT Code: CITIINBX  
Citibank India Nostro A/c Number with Citi Dublin: 0023898004 / IBAN : IE68CIT199005123898004  
Beneficiary a/c no: 0714247026  
Beneficiary Name : International Solar Alliance

3. ISA shall establish a trust fund under its financial regulations and rules for the receipt and administration of the aforesaid funds, including interest accruing.

4. The trust fund and the activities financed therefrom shall be administered by ISA in accordance with its applicable regulations, rules and administrative instructions or directives. Accordingly, personnel shall be engaged and administered; equipment, supplies and services purchased; and contracts entered into in accordance with the provisions of such regulations, rules, and directives.

5. All financial accounts and statements shall be expressed in United States dollars and there shall be no accounting or reporting in other currencies. For the purpose of

recording receipts and/or payments, all transactions shall be converted into United States dollars at the official United Nations accounting rate of exchange applicable on the date of receipt and/or payment.

#### Article II

The trust fund shall be utilized for the purpose of meeting the general management and oversight support costs and to finance the programme support services provided by ISA and its implementing entity (UNIDO) in the implementation of the STAR-C activities included in Annex A. The ISA and UNIDO shall sign a financial partnership agreement to support the implementation of STAR-C activities, supported by funds provided by the Donor, in accordance with the financial and programmatic conditions set out in Annex A. A detailed Project Document on STAR-C activities to be implemented by ISA and UNIDO, supported through donor funding, will be submitted to the Donor.

#### Article III

1. The ISA shall commence and continue to conduct operations under this Agreement upon receipt of a copy of this Agreement, signed by both Parties, and upon receipt of sufficient funds in accordance with Article I.
2. The Donor undertakes to meet the actual costs of the services specified in the Annex A, and ISA undertakes not to make any commitments for services not specified in the Annex A without the approval, in writing, of the Donor. A detailed Project Document on STAR-C activities to be implemented by ISA and UNIDO, supported through donor funding, will be submitted to the Donor.
3. Any modification or amendment of the Agreement shall be made in writing with the consent of both Parties. Where changes to the activities Document and its budget do not affect the main purpose of the activities, such as its objectives, strategy and priority areas, and provided the financial impact of such changes is limited to a transfer within a single budget output or a transfer between budget outputs involving a variation of 15 percent or less of the amount originally agreed, these changes will be concurred by Steering Committee.

#### Article IV

1. Ownership of equipment, materials, supplies and all other property financed from this trust fund shall vest in ISA. Unless otherwise provided in the preparatory assistance document, following operational completion of the activities, ownership of equipment, of materials and supplies, as well as other property necessary for operation of the activities, shall be transferred to the Donor or to an entity nominated by it.
2. The ownership of intellectual property rights related to the activities funded by the donor ("Activities"), including the reports and other documents relating to it (the "Results"), will be agreed upon by the parties. In case the intellectual property rights to the Results are owned jointly by the parties, each of the parties shall be free to use, modify, publish, translate and create any derivative works from such Results, as they



wish, for their official purposes. Where intellectual property rights related to the Activities are owned exclusively by ISA or the Donor, both Parties shall have the right to use the Results free of royalty or any charge of similar nature.

#### Article V

Evaluation of the activities financed from this trust fund shall be undertaken in accordance with the provisions contained in Annex A. A technical and financial report will be submitted to the donor every six months by ISA.

#### Article VI

The trust fund shall be subject exclusively to the internal and external auditing procedures laid down in the financial regulations, rules and administrative instructions and directives of ISA.

#### Article VII

In addition to any reports specified in Annex A, ISA shall provide the Donor with the following statements and reports in the format normally followed by ISA for accounting and financial reporting:

- (a) An annual financial statement showing income, expenditures for the year, and assets and liabilities as of 31 December with respect to the funds provided by the Donor;
- (b) A final financial statement within six months of termination or expiration of the Agreement.
- (c) A financial report every six months.

#### Article VIII

ISA shall notify the Donor when the activities for which the trust fund was established have been completed. The date of such notification shall be deemed to be the date of operational completion of the activities. This Agreement shall continue in force for the purposes stated in Article X.

#### Article IX

This Agreement may be terminated by either party on 30 days written notice to the other party, subject to the continuance in force of Article X for the purposes stated therein.

#### Article X

On operational completion of the activities as specified in Article VIII, or termination of this Agreement as specified in Article IX, the trust fund shall remain open until all expenditures incurred by ISA have been satisfied. Any balance due to ISA under Article III shall be charged by ISA to the trust fund and the Donor will reimburse ISA for any negative balance in the trust fund.

Upon submission of a final financial statement in accordance with Article VII (b), any surplus remaining in the trust fund shall be returned to the Donor or disposed of as requested by the Donor.

#### Article XI

The following addresses are specified for the purpose of this Agreement:

- (a) For ISA:  
Director General  
International Solar Alliance Secretariat  
Surya Bhawan,  
National Institute of Solar Energy Campus  
Gwal Pahari, Faridabad-Gurugram Road  
Gurugram, Haryana – 122003, India  
[Email: amathur@isolaralliance.org](mailto:amathur@isolaralliance.org)
- (b) For the Ministry of Europe and Foreign Affairs of France  
Mr. Philippe Lacoste  
Director of Sustainable Development  
Ministry of Europe and Foreign Affairs  
27 rue de la Convention  
CS91533  
75732 Paris Cedex 15  
Email : [secretariat.dgm-ddd@diplomatie.gouv.fr](mailto:secretariat.dgm-ddd@diplomatie.gouv.fr)

**Article XII**

This Agreement shall enter into force upon signature.

IN WITNESS WHEREOF, the undersigned, being duly authorized thereto, have signed the present Agreement in two copies in English.

For the Ministry of Europe and Foreign Affairs  
of France



Mr. Philippe Lacoste  
Director of Sustainable Development

For the International Solar Alliance



Mr. Ajay Mathur  
Director General

Place: *Paris*

Date: *2021/10/15*

Place: *New Delhi*

Date: *2021.10.26*

## Annex A

### Funding support from Donor for STAR-C Initiative:

- Total funding expected: Euro one million
  
- 1. **UNIDO's programmatic support to regional STAR centres**
  - Total estimated funding to be provided to UNIDO to cover their costs plus programmatic support to Regional STAR-Centres: Euro 600,000
    - Based on the draft STAR-C Workplan (UNIDO) programmatic support for regional Regional STAR centres like ECREE, including developing and implementing training, etc. This will also include any direct costs of UNIDO technical specialists leading the design and implementation of activities : Euro 555,556
    - General management and oversight support costs: Euro 44,444 (8% of the programmatic funding)

### 2. **ISA's programmatic support to NFPs for STAR-C activities:**

The ISA aims to provide programmatic support for supporting NFPs for implementing STAR-C activities. This will include providing direct technical and financial support for NFPs for effective coordination with regional STAR-Cs and implementing its activities in respective countries. For this purpose, the ISA secretariat will dedicate staff resources. A detailed program document will be submitted to donor for approval before the end of November 2021 in order to detail the above mentioned activities.

- Total funding requested: Euro 400,000
  - ISA's programmatic support to NFPs for capacity building activities lined to STAR-C: Euro 370,370. This would include providing direct technical and financial support to NFPs to engage with regional STAR-Cs and implement the STAR-C related activities in respective countries.
  - General management and oversight support costs: Euro 29,630 (8% of the programmatic funding)

It is noted that ISA will dedicate two full time ISA officials at technical level to support the implementation of the STAR-C activities funded by Donor.

A steering committee chaired by ISA, including a senior representative of the implementing agency, UNIDO, and of the Donor will meet once every three months.

## Annex 7: Origin of the Project

On 19 March 2018 the International Solar Alliance (ISA), based in New Delhi, India, and the United Nations Industrial Development Organization (UNIDO) signed a Joint Declaration on the joint promotion of solar energy globally (see Annex 1). The document includes joint cooperation on the development of knowledge networks, provision of evidence-based advice to Member Countries and the facilitation of south-south and triangular solar cooperation within the Global Network of Sustainable Energy Centres (GN-SEC), coordinated by UNIDO in partnership with the regional economic communities (RECs).

Following a joint UNIDO programming mission to New Delhi, on 16<sup>th</sup> October 2019 (see Annex 2), the Director General of ISA submitted an official request to UNIDO to provide support for the development and implementation of the International Solar Technology and Application Resource Centres (STAR C) programme. The STAR C aims at strengthening solar networks and qualification and certification capacities in ISA Member States, particularly in least developed countries (LDCs) and Small Island Developing States (SIDS). To have accelerated impact it was agreed to make use of existing GN-SEC capacities and apply a combined regional and national approach. The collaboration between the ISA and UNIDO on the STAR C was thereafter endorsed by the 2<sup>nd</sup> ISA Assembly which took place on 31<sup>st</sup> October 2019 in New Delhi, India (see Annex 3).

Thereafter, ISA and UNIDO organized a joint stakeholders’ consultation meeting on STAR C between 25<sup>th</sup> and 27<sup>th</sup> February 2020 in Paris, generously hosted by the Government of France (see Annex 4). The meeting deliberated an operational framework for the establishment and operation of STAR C globally and provided the basis for the formulation of this joint ISA UNIDO project document. A preparatory project to determine the final technical and financial design of the STAR C was launched.

On 15<sup>th</sup> June 2021, a Trust Fund Agreement between UNIDO and ISA (see Annex 5) for the preparatory assistance, and on 26<sup>th</sup> October 2021, an agreement between ISA and the Government of France through the Ministry of Europe and Foreign Affairs of France (see Annex 6) were signed. The following project document “Structuring of an International Network of Solar Technology and Application Resource Centres” - STAR C was formulated between 2021 and 2022 in close consultation between ISA, UNIDO and the involved GN-SEC centres. The Government of France pledged support of Euro 1 million for the first operational phase (two and a half years).

The STAR C project will be launched with initial limited funding of the Government of France, which is supposed to have a leverage effect. To increase the impact of the initiative, it is planned to mobilise further funding support during the implementation of the project. Therefore, the project document includes a conservative and optimistic budget scenario. This will allow further donors to join the initiative at a later stage. Initially, the project will focus on countries covered by the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), the East African Centre for Renewable Energy and Energy Efficiency (EACREEE) and the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE). The project document includes a detailed results framework with measurable indicators, which allows a flexible extension of the geographic and thematic coverage.

## Annex 8: Justification for the Assistance by ISA and UNIDO

The STAR C project is relevant at the intersection of the individual mandates of ISA and UNIDO. Moreover, their respective organisational mandates and associated human, institutional and technical resources and experiences complement each other.

### Mandate of ISA

The International Solar Alliance (ISA) has been conceived as a global platform for cooperation to help achieve the common goals of increasing the use of solar energy in a safe, convenient, affordable, equitable and sustainable manner. ISA works to: improve energy access; accelerate the low carbon energy transition; and ensure energy security. The ISA’s vision is to facilitate energy access by delivering cleaner electricity to all by 2030. The ISA’s mission is to unlock US\$ 1 trillion of investment by 2030 by reducing the cost of the technology and its financing, and increasing the skills of people working in the industry.

ISA was jointly initiated by the Governments of India and Government of France and was launched during the 21st Conference of Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC), in short, the Paris Climate Change Conference, in December 2015. ISA has since transformed into an intergovernmental organization following the entry into force of its Framework Agreement on 6 December 2017, and subsequently held its Founding Conference on 11 March 2018 in New Delhi, India. ISA has a membership of 81 countries with a further 22 countries in the process of ratification of the Framework Agreement to become full member.

The ISA recognises the potential of solar energy to support a transition to a greener and cleaner energy mix globally, and, in particular, can significantly improve the lives of around 759 million people who live without access to electricity. However, the widespread deployment of solar technology in the ISA members is largely in its infancy and has been hampered, in many cases, by a lack of local technical knowledge, expertise, and capacity.

### Mandate of UNIDO

UNIDO is the specialised United Nations agency that works to support its developing country Member States with policy for and practice of industrialization, with a specific mandate for Inclusive and Sustainable Industrial Development (ISID) as embedded in the Organization’s 2013 Lima Declaration (18) and reinforced by the Organisation’s 2019 Abu Dhabi Declaration (19). ISID is also encapsulated in SDG9: *build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation*. UNIDO’s global ISID endeavours target four strategic priorities (20), respectively: creating shared prosperity; advancing economic competitiveness; safeguarding the environment; and strengthening knowledge and institutions. The STAR C project contributes simultaneously to safeguarding the environment as well as strengthening knowledge and institutions.

The work of UNIDO has a strong focus on Africa and SIDS. UNIDO contributes to the implementation of the *Agenda 2063: The Africa We Want*. ISID directed towards SDG9 is associated with job creation, sustainable livelihoods, innovation, technology and skills development, food security and equitable growth — key requirements for eliminating poverty by 2030. In this context, the African Union (AU) in partnership with UNIDO is spearheading the implementation of the Third Industrial Development Decade for Africa (2016–2025) as adopted by the UN General Assembly on 25 July 2016. Moreover,

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18 UNIDO (2013), *Lima Declaration: towards inclusive and sustainable industrial development*, [https://www.unido.org/sites/default/files/files/2018-12/UNIDO\\_GC15\\_Lima\\_Declaration.pdf](https://www.unido.org/sites/default/files/files/2018-12/UNIDO_GC15_Lima_Declaration.pdf)

19 UNIDO (2019), *Abu Dhabi Declaration*, [https://www.unido.org/sites/default/files/files/2019-11/UNIDO\\_Abu\\_Dhabi\\_Declaration\\_1.pdf](https://www.unido.org/sites/default/files/files/2019-11/UNIDO_Abu_Dhabi_Declaration_1.pdf)

20 UNIDO (2017), *Medium Term Programme Framework 2018-2011*, [https://www.unido.org/sites/default/files/files/2019-01/MTPF\\_Brochure\\_23-06-2017.pdf](https://www.unido.org/sites/default/files/files/2019-01/MTPF_Brochure_23-06-2017.pdf)

UNIDO contributes to the implementation of the SIDS Accelerated Modalities of Action (SAMOA) Pathway through its SIDS Strategy 2019-2025.

UNIDO's energy portfolio addresses (industrial) energy efficiency, renewable energy applications (in particular for and by industries) and low-carbon cleantech innovation and entrepreneurship. Regarding renewable energy, UNIDO works on '*renewable energy as an industry*', with a focus on product development, component manufacturing, system design, installation and service, and '*renewable energy for industry*', to improve energy access for and increase clean energy use in industries. UNIDO also supports a diversity of regional and global knowledge and capacity building initiatives that create and nurture south-south and triangular cooperation for transfer, adaptation and investment in clean energy solutions in emerging markets and developing countries, always with a gender perspective. These include in particular:

- *GN-SEC*: in partnerships with the established Regional Economic Communities and their Member States, UNIDO is supporting the set-up and operation of regional centres for promotion of energy efficiency and renewable energy. There are currently eight operational centres (e.g. East Africa, ECOWAS (West Africa), Pacific) with a further two being considered. Each of these works on issues of regional cooperation, energy policy, capacity building and skills development, and project and investment support, focusing on the specific sustainable energy opportunities and challenges within their respective regions.
- *Climate Technology Centre and Network (CTCN)* ([www.ctc-n.org](http://www.ctc-n.org)): established under the UN Framework Convention on Climate Change, CTCN provides a mechanism for developing countries to put forward specific climate technology requests for consideration and initial advisory support, through CTCN's Network Members.
- *Private Financing Advisory Network (PFAN)* ([www.pfan.net](http://www.pfan.net)): works to connect investors to high potential climate and clean energy projects in emerging markets.

### Interagency Synergies

The ISA and UNIDO signed a joint declaration on 19<sup>th</sup> March 2018 during the side-event of the East Africa Meeting of UN Sustainable Energy for All (see Annex 1). Both agencies agreed to partner on the promotion of solar energy globally, through the strengthening of quality infrastructure and standards for products and services, as well as strengthening qualification and certification frameworks. The present joint ISA UNIDO Network Support Project for STAR C is a practical way towards operationalization and realization of this 2018 Joint Declaration.

The ISA - UNIDO cooperation capitalizes on mutual strengths and mandates of both organizations.

- ISA is the owner of the STAR C initiative and convenes its Member Countries on a focused and ambitious agenda to scale up the deployment of and investments in solar energy in all its forms and applications for improved energy access and enhanced climate action. ISA grants STAR C legitimacy and amasses the highest levels of political support that help put in place the policies, strategies and frameworks that can unlock and unleash implementation of and investments in solar energy projects in ISA Member Countries.
- UNIDO is the co-technical capacity and knowledge partner to the STAR C initiative. UNIDO avails its project implementation and execution track record to support ISA with the implementation of the STAR C project, including the knowledge, institutional resources and networks as well as the established project implementation processes and systems (for e.g. procurement, recruitment, legal, finances, travel etc.) fulfilling donor requirements. UNIDO will contribute to the local integration of the STAR C activities by creating strong links to the GN-SEC program. The involvement of the regional centres will ensure local ownership of STAR C activities and create



synergies to ongoing solar initiatives and resources in the respective regions. Specifically, the collaboration with UNIDO brings to the STAR C project the following:

- 1) Transfer, adaptation, deployment and scaling up of diverse sustainable energy technologies, practices and policies in emerging and developing countries;
- 2) Access to its field network (of Regional and Country Offices) to provide in the countries covered by GN-SEC centres involved in the project with technical support and liaison with government, business and technical institutions;
- 3) Access to global human and institutional resources and networks for solar and renewable energy deployment including through the GN SEC network where appropriate that is well positioned to support execution of regional work based on established contractual arrangements; additionally, CTCN, PFAN and connections with relevant UNIDO solar energy projects globally could be utilised, apart from linked initiatives where solar technology is utilized; create links to the existing UNIDO solar cooperation with the IEA programs, CORE, Alliance for Rural Electrification (ARE);
- 4) Strong orientation on manufacturing and private sector involvement to develop national and regional solar energy industries and supportive solar technology and innovation ecosystems;
- 5) Strong and proven corporate processes (procurement, HRM, project management), systems and capacities for delivery of technical cooperation projects in emerging markets and developing countries.
- 6) Track record of a broad range of national/regional projects and programs related to solar (PV and solar thermal) in developing countries covering different types of interventions (e.g. policy, qualification and certification, quality infrastructure, knowledge and awareness, business and investment promotion, productive uses, etc.).
- 7) Experience in working with international institutions and national governments on norm setting and the adoption of standards (e.g. ISO 50001) which is relevant for the quality of infrastructure dimension.
- 8) Vast institution building experience with regard to similar technology centres and initiatives;
- 9) Experience on introduction and implementation of quality frameworks on electric devices in LDC and small islands.

## Annex 9: Context of the solar energy in African countries and SIDS

### Africa

Hosting more than 1,3 billion people – 17% of the world population – African countries are well placed to industrialize as they have the right mix of factors, including endowments of natural and energy resources, favourable demographics, urbanization, an emerging middle class and a highly educated diaspora. However, without industrial reform and structural transformation, it is unlikely that the continent will be able to generate the magnitude of urban and rural jobs and revenues. Costly and unreliable energy supply hampers the competitiveness of urban and rural African industries and hinders leapfrogging to emerging sectors driven by the fourth industrial revolution (4IR). Higher value product manufacturing and servicing requires a different quality and quantity of energy, as well as access to digital infrastructure and intelligent energy solutions. Furthermore, particularly in Sub Sahara Africa still more than 600 million people have no access to electricity and more than 900 million to modern cooking services, particularly in peri-urban and rural areas<sup>21</sup>, and 80% of African businesses face frequent power cuts. Low-income clients pay higher prices for low-quality energy services than better-off ones for quality services.

Africa still attracts only a small fraction of global investments in renewable energy, predominantly focused on North Africa and South Africa. Sub-Sahara Africa and particularly LDCs attract only low levels of foreign direct investment and it remains very difficult to mobilise domestic financing for renewable energy infrastructure. Without a significant acceleration of investments, rural and remote areas in Sub Sahara Africa will remain unserved. The market introduction of solar energy solutions faces manifold challenges and barriers. Investments in grid-connected PV or CSP infrastructure was mostly focused on North Africa, driven by solar initiatives in Egypt and Morocco<sup>22</sup>; and, with data from 2020, in Africa, there is a total installed capacity of 10.6 GW in solar PV, of which, 6 GW corresponds to South Africa, 1.7 GW to Egypt, 734 MW to Morocco and 448 to Algeria. Concentrated Solar Power achieved 1 GW of installed capacity, while off-grid solar PV accounted only 10% of the continental capacity<sup>23</sup>.

Therefore, without prioritising clean energy investment, a sharp increase of Africa’s energy related GHG emissions in business as usual scenarios (currently 2% of global CO<sub>2</sub> emissions) by 2050 is projected. The manufacturing sector contributes to around 30% to 40% of total African GHG emissions and is expected to double by 2050. Vast untapped renewable energy and energy efficiency potential is available in all parts of Africa. 80% of sectoral emissions come from cement, coal liquids, petroleum refining, iron and steel and ammonia. 75% of the emissions origin from South Africa (37%), Egypt (20%), Algeria (10%) and Nigeria (7%). It is estimated that a net-zero carbon emission scenario for Africa requires USD 2 trillion of clean energy investment by 2050 (McKinsey 2021). USD 600 billion is needed to decarbonize existing manufacturing industries and power networks (retrofit brownfield manufacturing facilities and into new greenfield facilities). USD 1.4 trillion would be invested in new low-emitting businesses and networks replacing high-emitting legacy sectors. Opportunities for local clean energy and resource efficient manufacturing and servicing could generate additional USD 200 million to USD 2 billion revenues annually. This could lead to a net additional 3,8 million jobs by 2050 in areas such as off-grid solar and mini-grids, among others.

But apart from that, human capacities remain weak across all levels and stakeholder groups (e.g. planners, architects, policy makers, utilities, rural electrification agencies, businesses, universities and

<sup>21</sup> IEA, IRENA, UNSD, World Bank, W. (2021). Tracking SDG 7: The Energy Progress Report. <https://www.irena.org/publications/2021/Jun/Tracking-SDG-7-2021>

<sup>22</sup> Adenle, A.A. Assessment of solar energy technologies in Africa-opportunities and challenges in meeting the 2030 agenda and sustainable development goals. *Energy Policy* **2020**, 137, 111180, doi:10.1016/j.enpol.2019.111180

<sup>23</sup> IRENA *Renewable capacity statistics 2021*; International Renewable Energy Agency (IRENA): Abu Dhabi, UAE, 2021; <https://www.irena.org/publications/2021/March/Renewable-Capacity-Statistics-2021>

vocational centres), as well as the quality infrastructure and standards for solar products and services. Challenges related to the market entry of low quality solar products and uncertified installations is hampering the market uptake and credibility in the technology. It also endangers the sustainability of the energy transition. So far, the international support for such qualification and certification activities and networks is very limited, particularly in the area of decentralised PV, SHC and CSP solutions. Therefore, the market remains dominated by external suppliers from emerging and industrialised countries and reduced opportunities for local value creation in terms of local jobs and revenues, many solar projects are donations and are not based on business models to ensure the long-term maintenance and sustainability of the systems. Added to this, in the African continent, most of the training programs are set up in short-term and involve higher number of professionals compared to long term programs, when industry and doctoral research are also relevant and needed, especially in sub-Saharan Africa to provide technical and entrepreneurial understanding to technological deployment<sup>24</sup>.

### Small Island Developing States (SIDS)

The development challenges of SIDS in Africa, Caribbean, Pacific and Indian Ocean are well documented. SIDS face a series of disadvantages due to their limited land size, lack of natural resources, dependence on product imports and financial inflows from external markets. Moreover, SIDS are highly vulnerable to global emergencies and external shocks, such as climate change as well as the COVID-19 health and economic crisis. Recent research shows that by 2030, small islands' ecosystems are projected to begin to die. Among SIDS, the ones from the Pacific are recognized as the most vulnerable to economic and environmental impacts due to their remoteness and fragmentation compared to other regions<sup>25</sup>. SIDS economies, which are more dependent on environmental services than other economies, are already being negatively affected by changes in climate and rising sea levels and are likely to be the largest economic losers with large displaced populations if average global temperatures go beyond 1.5 degrees Celsius. SIDS are water-stressed, and projections indicate things will not get better.

The success of COVID-19 recovery, economic diversification and climate adaptation strategies of SIDS highly depend on a power sector reform and a transformational shift of the energy system towards renewable energy and energy efficiency. Currently, SIDS import more than 200 million barrels of petroleum, which cost billions of USD, every year. SIDS can save up USD 10 billion/year in fuel costs, on average 3% of their Gross Domestic Product (GDP). Therefore, the transition towards renewable energy and energy efficiency (RE&EE) solutions has the highest priority in all SIDS, being expected to make key island industries (e.g. water supply, agriculture, food processing, tourism, fishery and the wider blue economy) more productive and competitive.

In light of this, most of the SIDS regions have adopted energy policies with ambitious RE&EE targets by 2030 and beyond, where solar energy technologies play an important role despite the scarcity of land. There is a potential for hybridization of diesel gensets of 15 GW. Moreover, there is also opportunity for solar thermal heating and cooling technologies as most islands have high rates of tourism and related warm water heating and air conditioning demand. However, only a few SIDS have reached a significant renewable and solar energy share in their electricity mix with a total installed

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<sup>24</sup> Lucas, H.; Pinnington, S.; Cabeza, L.F. Education and training gaps in the renewable energy sector. *Sol. Energy* 2018, 173, 449–455, doi:10.1016/j.solener.2018.07.061.

<sup>25</sup> Eras-Almeida, A.A.; Egado-Aguilera, M.A. Hybrid renewable mini-grids on non-interconnected small islands: Review of case studies. *Renew. Sustain. Energy Rev.* 2019, 116, 109417, doi:10.1016/j.rser.2019.109417.

capacity of 5.3 GW. Around 1.8 GW of renewable generation capacity (1.1 GW of it through solar) was installed between 2014 and 2019<sup>26</sup>.

Moreover, from a recent evaluation of the SIDS Lighthouses Initiative, supported by the Pacific Power Association, the PCREEE (Pacific Centre for Renewable Energy and Energy Efficiency), the World Bank and the International Finance Corporation, it was determined that, in the Pacific, a capacity building program to strengthen power utilities and regulators in the design and negotiation of business models (e.g., PPA – Power Purchase Agreements) should consider the following factors, the small size of RE projects due to limited area for large scale initiatives, reducing the attractiveness for new investors; limited pipeline of RE projects, including solar PV systems with most of them based on stand-alone solutions, which reflects the high up-front costs and low sustainability of projects; low opportunities to access to funds and to ensure financing security through guarantees for private sector; and the lack of credible information to enable decision-making<sup>27</sup>.

To avoid duplication of efforts and funding as well as to ensure complementarity and build synergy, some examples of relevant projects and initiatives have been identified in these regions and outlined in the below table.

**Table 19: Baseline Projects**

Project title	Timeframe	Financiers	Key objective
ISA Infopedia Solar Academy	Since 2019	NA	Infopedia is an online platform dedicated to the dissemination of information, best practices and knowledge on Solar Energy. This project is supported by the EU and is likely to be launched in October 2019.
Southern African Solar Thermal Training and Demonstration Initiative (SOLTRAIN)	Since 2009	Austrian Development Agency and OFID	SOLTRAIN is a regional program on capacity building and demonstration of solar thermal systems in the SADC region. The aim of SOLTRAIN is to support the target countries in changing from a largely fossil energy supply system to a sustainable supply structure based on renewable energy in general, and on solar thermal in particular.
Train-The-Trainer Programme on Large-Scale Grid-Connected PV Projects in Nigeria	2018 - 2019	Energy Commission of Nigeria / Global Environmental Facility (ECN/GEF)	The Lagos Energy Academy (LEA) and the National Power Training Institute of Nigeria (NAPTIN) intended to develop training hubs for solar PV off-grid systems and expand their activities toward grid-connected solar PV systems as well. To achieve this goal, a two week (12 days) train-the-trainer (TtT) programme for the trainers of Lagos Energy Academy (LEA) and National Power Training Institute of Nigeria (NAPTIN) was implemented to enable them to deliver effective trainings on solar PV grid-connected systems.
Regional Certification Scheme for Sustainable Energy Skills - ECREEE	Since 2015	International Renewable Energy Agency (IRENA), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the EUEI Partnership Dialogue Facility (EUEI PDF) and the Austrian Development Agency (ADA).	Development of the regional market for RE and EE services by establishing a scheme for certifying the skills of solar PV installers and other sustainable energy professionals. The objective was to introduce a quality mark for sustainable energy skills recognized by professionals and end users across borders in all 15 ECOWAS member states. ECREEE serves as the regional certification body and will align all structures and procedures to the requirements of the norm ISO/IEC 17024:2012 “Conformity assessment — General requirements for bodies operating certification of persons” <sup>28</sup>
ECREEE – Regional Off-Grid Electrification Project (ROGEP) on PV stand-alone market development	Since 2017	World Bank (Lighting Africa Program)	ROGEP aims to enhance rural electricity access in the West Africa and Sahel region, by promoting the use of stand-alone solar systems (solar lanterns, solar home systems, solar water pumps, solar mills, solar sewing machines, etc.). The project aims to reduce demand and supply-side barriers for solar markets, by providing

<sup>26</sup> IRENA *SIDS Lighthouses Initiative Progress and way forward*; International Renewable Energy Agency (IRENA): Abu Dhabi, UAE, 2021; [https://islands.irena.org/-/media/Files/IRENA/Sids/IRENA\\_SIDS\\_Brochure\\_2019.ashx](https://islands.irena.org/-/media/Files/IRENA/Sids/IRENA_SIDS_Brochure_2019.ashx)

<sup>27</sup> IRENA *SIDS Lighthouses Initiative Progress and way forward*; International Renewable Energy Agency (IRENA): Abu Dhabi, UAE, 2021; [https://islands.irena.org/-/media/Files/IRENA/Sids/IRENA\\_SIDS\\_Brochure\\_2019.ashx](https://islands.irena.org/-/media/Files/IRENA/Sids/IRENA_SIDS_Brochure_2019.ashx)

<sup>28</sup> <http://www.ecreee.org/certification>

			loan, guarantee and grant support to local banks, solar distributors and installers. The project is jointly implemented by the ECOWAS Commission, ECREEE, BOAD and local banks in West Africa. It includes a strong quality infrastructure (e.g. product and service standards) and capacity building component for local solar entrepreneurs and start-ups.
<b>ESETA SOUTH AFRICA - STUDY TOUR ON RENEWABLE ENERGIES FOR SOUTH-AFRICAN DELEGATES</b>	2011	Energy Sector Education and Training Authority of South-Africa	RENAC designed and organized a training program with site visits to new developments in photovoltaics, wind energy, CSP, solar thermal energy and hydrogen fuel cells for South-African Delegates from all Provinces.  The Energy Sector Education and Training Authority of South-Africa (ESETA) aimed to gain information on the latest market and renewable energy technology trends in Germany.
<b>Investment Appraisal Training in Cape Verde</b>	2012	ECREEE	Training developed and provided by the Renewable Energy Academy AG (RENAC). The objective of the training course was to provide the participants with the first-hand knowledge about investment appraisal for renewable energy. <sup>29</sup>

Although these initiatives are relevant and valuable lessons learned can be drawn from their implementations, all of them are lacking a solid structure to guarantee a long-term implementation. The STAR C can provide support to address the gap, building capacities through training institutions with a well-defined structure in academy.

<sup>29</sup> Information of some projects taken from:  
[https://www.renac.de/projects/references?tx\\_zrwcommunity\\_community%5Bcontroller%5D=Search&cHash=ee44e3f907a1db5c2e5c739840b4312c](https://www.renac.de/projects/references?tx_zrwcommunity_community%5Bcontroller%5D=Search&cHash=ee44e3f907a1db5c2e5c739840b4312c)

## Annex 10: Logical Framework

The below logical framework includes main outputs and activities and will be further detailed and operationalized on annual basis through operational workplan and budgeting process, to reflect specifics for STAR contributions to be delivered over specific period (e.g. trainings, priority topics for knowledge products, networking activities etc.). The logical framework is thereby designed for scalability to allow the flexibility to strike a proper balance between needs and interests of STAR C targeted beneficiaries, the selected ISA developing countries and their National Focal Points and the selected GN-SEC regions and centres, and the available funding and other resources for this joint ISA UNIDO STAR C Project with the support of the Government of France. The included indicators (incl. IRPF) refer to the conservative budget scenario. In the case of additional funding mobilised, the indicator framework would be expanded as agreed in the Steering Committee. The success of the project will be evaluated in line with the established indicators for the conservative scenario.

**Table 20: Logical Framework**

		Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
<b>Development (Impact)</b>	<b>Objective</b>	Enhance institutional, technical and networking capacity of member countries for accelerated deployment of certified solar energy thereby ensuring energy security	<ul style="list-style-type: none"> <li>At least 300 businesses in key industries gain access to quality PV and solar thermal products and services in various GN-SEC regions (at least 40% women-led businesses envisaged)</li> <li>At least ten (10) introduced quality solar products and services have a quantifiable impact on GHG emission reduction in various GN-SEC regions</li> <li>At least ten (10) quality solar products and services have a quantifiable impact on income generation and productive uses (e.g. irrigation) in various GN-SEC regions</li> </ul> <p><i>IRPF Indicator: SOC.2 SMEs with increased inclusion in value chains = 300</i></p> <p><i>IRPF Indicator: ENV.5 New or improved green products made available or used = 10</i></p>	<ul style="list-style-type: none"> <li>National systems for SDG monitoring, particularly SDG 7 and 13</li> <li>National GHG reporting to the UNFCCC</li> <li>Regional statistic on GHG emissions</li> <li>National statistics on socio-economics and development</li> <li>Regional and national policy and regulations</li> </ul>	Regional and national policy and regulations support an enabling environment for sustainable energy in general and solar energy in particular

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
<b>OUTCOMES/OUTPUTS</b>	<p><b>Outcome 1: Improved quality and certification frameworks for PV and solar thermal products and services</b></p>	<ul style="list-style-type: none"> <li>At least 300 energy experts in three (3) GN-SEC regions have access to a regional minimum quality performance standard and compliance framework for PV and solar thermal <u>products</u> (at least 40% female experts envisaged)</li> <li>At least 300 energy experts in three (3) GN-SEC regions have access to a regional quality and compliance framework for PV and solar thermal <u>services</u> (at least 40% female experts envisaged)</li> <li>At least 50 registered energy businesses in three (3) GN-SEC regions offer PV and solar thermal products and services in line with the established quality framework (at least 40% women-led envisaged)</li> </ul> <p><i>IRPF Indicator: KASA.2 Actors gaining skills and capacity = 300</i></p> <p><i>IRPF Indicator: BUS.1 Firms with improved management practices = 50</i></p>	<ul style="list-style-type: none"> <li>Assessment reports on the state of play of the quality performance standards and compliance framework for PV and solar thermal products and services in targeted GN-SEC regions</li> <li>Regional minimum quality performance standards publications for PV and solar thermal products and services</li> <li>Available PV and solar thermal products and services certifications</li> <li>Documentation of solar businesses</li> <li>MV&amp;E mechanisms established</li> <li>Meeting minutes and report on recommendations</li> <li>Monitoring reports of the standard and quality framework implementation</li> </ul>	<ul style="list-style-type: none"> <li>Supportive regional policy and regulations for the establishment of the standards</li> <li>Continued GN-SEC centres and ISA developing countries members interest for PV and solar thermal products and services deployment</li> <li>Interested and supportive training institutes (universities, VTIs, etc.) willing to get accredited and take part to the process</li> <li>Interest and commitment of national and international experts to support quality frameworks implementation</li> </ul>
	<p><b>Output 1.1:</b> Regional quality and certification framework for solar products established</p>	<ul style="list-style-type: none"> <li>One (1) regional quality and certification framework for selected PV or solar thermal products per GN-SEC region (e.g. solar photovoltaic panels, batteries, converters, collectors, among others)</li> <li>Implementation of at least one product standard in three (3) ISA countries located in various GN-SEC regions</li> </ul>	<ul style="list-style-type: none"> <li>Published regional quality framework for PV and solar thermal products</li> <li>Report on MV&amp;E mechanisms implemented</li> <li>Evidence on introduced standard in three ISA countries</li> <li>Conceptualization of the competency training scheme</li> <li>Accreditation reports</li> </ul>	<ul style="list-style-type: none"> <li>NFIs of selected ISA developing countries and GN-SEC centres will support the process and coordinate at regional and national level the development and monitoring of the frameworks</li> </ul>



	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
		<ul style="list-style-type: none"> <li>At least three (3) competency training schemes for solar products standardisation and certification available</li> <li>Accreditation of at least three (3) institutes/bodies within 3 GN-SEC regions</li> </ul> <p><i>IRPF Indicator: NOO.1 Standard setting processes with UNIDO participation = 1</i></p>		
	<p><b>Output 1.2:</b> Regional quality and certification framework for solar services established</p>	<ul style="list-style-type: none"> <li>One (1) regional quality and certification framework for selected PV or solar thermal services per GN-SEC region (operation, maintenance, technical quality assurance, etc.)</li> <li>Implementation of at least one service standard in three (3) ISA countries located in various GN-SEC regions</li> <li>At least three (3) competency training schemes for solar services standardisation and certification available</li> <li>Accreditation of at least three (3) institutes/bodies within 3 GN-SEC regions</li> </ul> <p><i>IRPF Indicator: NOO.1 Standard setting processes with UNIDO participation = 1</i></p>	<ul style="list-style-type: none"> <li>Published regional quality framework for PV and solar thermal services</li> <li>Report on MV&amp;E mechanisms implemented</li> <li>Evidence on introduced standard in three ISA countries</li> <li>Conceptualization of the competency training scheme</li> <li>Accreditation reports</li> </ul>	<ul style="list-style-type: none"> <li>NFIs of selected ISA developing countries and GN-SEC centres will support the process and coordinate at regional and national level the development and monitoring of the frameworks</li> </ul>
	<p><b>Activities under output 1.1. and 1.2</b></p>	<ul style="list-style-type: none"> <li>Assessment to identify qualification and certification barriers hindering the uptake of <i>solar products and services</i> markets from international experience in the GN-SEC regions and ISA countries</li> </ul> <p><i>Responsibility for implementation under the conservative scenario: UNIDO</i></p>		

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
	<ul style="list-style-type: none"> <li>Assessment of existing national/regional qualification, certification and accreditation frameworks (quality infrastructure) for solar products and services in GN-SEC regions and ISA member countries, status of enforcement and conformity of products/services with these or international standards (e.g., IEC, ISO) <i>Responsibility for implementation under the conservative scenario: UNIDO</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Develop and facilitate the approval by local government of ISA countries within the GN-SEC regions of inclusive regional minimum quality performance standards and compliance frameworks for solar products and services in GN-SEC regions in line with international standards and best practices (e.g., IEC, ISO, Googla, Clasp). <i>Responsibility for implementation under the conservative scenario: UNIDO</i></li> </ul>			
	<ul style="list-style-type: none"> <li>In line with the established quality frameworks, develop regional competency training schemes on solar product and services standards and identify relevant institutes and bodies, which are already or could become providers of solar products and services certification within the GN-SEC regions and ISA member countries <i>Responsibility for implementation under the conservative scenario: ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Assist GN-SEC and ISA member countries in the implementation of regional standards and compliance frameworks for solar products and services (incl. processes for certification and accreditation) on national level in few pilot countries and mobilise international technical and financial support <i>Responsibility for implementation under the conservative scenario: ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Facilitate national and international accreditation of institutes and bodies within the GN-SEC regions and ISA developing countries, which are or could provide solar products and services certification, by strengthening their capacities or by teaming and twinning with other players. Share lessons of the accreditation process with other institutes/bodies within the regions for scale up. <i>Responsibility for implementation under the conservative scenario: ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Establish group of technical advisors involved in quality infrastructure and the enforcement of solar quality products and services standards in 3 GN-SEC regions (e.g., test centres, universities and training institutes, industrial companies or importers). <i>Responsibility for implementation under the conservative scenario: UNIDO</i></li> </ul>			
	<p><b>Output 1.3:</b> Regional monitoring and verification system established</p>	<ul style="list-style-type: none"> <li>One (1) MV&amp;E mechanism/tool for solar products and services standard implemented in at least one (1) of the GN-SEC regions with a gender a youth responsive manner <i>IRPF Indicator: TCO.3 Toolkits and guidelines produced = 1</i></li> </ul>	<ul style="list-style-type: none"> <li>Report on MV&amp;E mechanisms implemented</li> </ul>	<ul style="list-style-type: none"> <li>NFIs of selected ISA developing countries and GN-SEC centres will support the process and coordinate at regional and national level the development and monitoring of the frameworks</li> </ul>
	<p><b>Activities under output 1.3</b></p>			
	<ul style="list-style-type: none"> <li>Develop a regional monitoring, verification and enforcement (MV&amp;E) mechanism/tool for solar product and service standards, including recommendations regarding evolution of regulatory frameworks. Validate the tool in at least three GN-SEC regions before implementation. <i>To be implemented only under the optimistic scenario</i></li> </ul>			

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
	<ul style="list-style-type: none"> <li>Facilitate the implementation of the MV&amp;E mechanism/tool for solar product and service standards in partnership with the GN-SECs and few selected countries, by appropriate planning and relevant regulatory framework.</li> </ul> <p><i>To be implemented only under the optimistic scenario</i></p>			
<p><b>OUTCOMES/OUTPUTS</b></p>	<p><b>Outcome 2: Enhanced capacities of institutions to offer certified/registered quality solar curricula and training</b></p>	<ul style="list-style-type: none"> <li>At least three (3) institutions/entities in various GN-SEC regions offer enhanced quality solar curricula, and register them with the national/regional qualification authorities</li> <li>At least fifty (50) certified trainers in five (5) certified institutions/entities in various GN-SEC offer certified/registered quality training on PV and solar thermal, at least 40% of women and 30% of youth participation will be pursued. Youth (at least 30% of young women)</li> <li>At least 300 solar experts in various GN-SEC regions benefit from certified/registered quality solar curricula and training, at least 40% of women and 30% of youth participation will be pursued. Youth (at least 30% of young women)</li> <li>At least one institute is internationally / regionally accredited to provide solar products and services certification</li> <li>One gender-responsive solar skills development plan, considering the different training needs of women and men</li> </ul>	<ul style="list-style-type: none"> <li>Curriculums developed available online</li> <li>Feedback about the regional competency training strategy</li> <li>Certification and accreditation forms</li> <li>Training needs assessment report</li> <li>Test training report including evaluation form(s), trainee’s feedback, participation list(s)</li> <li>Certified training report</li> <li>Awareness raising and workshops reports</li> <li>MV&amp;E mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>Universities, VTIs, etc. demonstrated established structure to offer technical careers and studies,</li> <li>Available minimal infrastructure and facilities for provision of trainings and tests</li> <li>Institutional regulation to enable agreements and information exchange</li> </ul>

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
		<p><i>IRPF Indicator: GOV.1 Institutions established or strengthened = 3</i></p> <p><i>IRPF Indicator: KASA.2 Actors gaining skills or capacity= 50</i></p> <p><i>IRPF Indicator: KASA.1 Actors gaining awareness and knowledge = 300</i></p>		
	<p><b>Output 2.1:</b> Development of regional assessment and implementation framework for solar curricula</p>	<ul style="list-style-type: none"> <li>One (1) practical minimum quality conformity tool to assess the quality of solar curricula and training (gender mainstreamed)</li> <li>At least one (1) regional assessment on existing solar curricula (e.g. universities, vocational training centres), capacities and ongoing regional/national programs developed/registered</li> <li>At least one (1) regional solar capacity building strategy for one GN-SEC region developed that considers GEEW (e.g. different needs of women, strategy how to promote leadership and involvement of women, partnership with women’s associations, etc.)</li> </ul> <p><i>IRPF Indicator: TCO.3 Toolkits and Guidelines produced = 1</i></p> <p><i>IRPF Indicator: PAO.1 Industrial strategies and industrial policy documents = 1</i></p>	<ul style="list-style-type: none"> <li>Available assessment tool gender and youth responsive</li> <li>Regional assessment report on existing solar curricula</li> <li>Published regional solar capacity building strategy</li> <li>Consultation report including list of interviewees and feedback received</li> <li>Trainings for National/Regional Qualification authorities</li> </ul>	<ul style="list-style-type: none"> <li>Interested and supportive training institutes (universities, VTIs, etc.) willing to get accredited and take part to the process</li> <li>Available and resourceful professors to take part in the process and conduct training of trainers at a larger scale</li> <li>Decision makers interested and willing to learn and support the process</li> </ul>
	<b>Activities under output 2.1</b>			
	<ul style="list-style-type: none"> <li>In a gender responsive manner, assess gaps with regard to institutional training capacities, curricula (e.g., universities, vocational training centres, regional and national qualification authorities), ongoing regional/national programs within GN-SEC regions addressing various technologies and beneficiaries (e.g., installers, planners, designer, financiers, project managers, policy makers)</li> </ul> <p><i>Responsibility for implementation under the conservative scenario: UNIDO</i></p>			

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
	<ul style="list-style-type: none"> <li>Undertake assessment of solar skills needs, specifically in the context of gender mainstreaming <i>Responsibility for implementation under the conservative scenario: UNIDO</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Develop practical tool in a gender responsive manner to assess minimum quality conformity of national solar curricula offered by institutions for various solar technologies and beneficiaries in line with established standards or guidelines on regional/international level <i>Responsibility for implementation under the conservative scenario: UNIDO</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Based on assessments (collecting and promoting best practises), develop regional solar capacity building strategies in various GN-SEC regions directed to enhance the quality and quantity of solar training institutions and curricula, including trainings to qualification authorities to conduct the assessments and reviews. <i>Responsibility for implementation under the conservative scenario: ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Assist GN-SEC and ISA member countries in the implementation of the regional strategy and assessment tool on national level and mobilise international technical and financial support <i>Responsibility for implementation under the conservative scenario: ISA</i></li> </ul>			
	<p><b>Output 2.2:</b> Enhanced quality and accessibility of solar curricula, training materials and tools</p>	<ul style="list-style-type: none"> <li>At least six (6) capacity building institutions consulted (at least 40% women)</li> <li>Three (3) curriculars developed on PV, solar thermal technologies and more general solar related topic (gender mainstreamed)</li> <li>At least one (1) test modules in at least two (2) GN-SEC regions (gender mainstreamed)</li> <li>One (1) solar energy academy established in East Africa</li> </ul> <p><i>IRPF Indicator: TCO.3 Toolkits and Guidelines produced = 3</i></p>	<ul style="list-style-type: none"> <li>Three available online curriculars</li> <li>Test modules report including number of attendees (gender disaggregated), test results, training evaluation reports with trainee’s feedback, lessons learnt and recommendations</li> <li>Material and teaching tools available</li> <li>Solar Academy established and operational in East Africa (Country TBD at the inception phase)</li> </ul>	<ul style="list-style-type: none"> <li>Interested and supportive training institutes (universities, VTIs, etc.)</li> <li>Available and resourceful professors to take part in the process</li> <li>Decision makers interested and willing to learn and support the process</li> </ul>
	<p><b>Activities under output 2.2</b></p>			
	<ul style="list-style-type: none"> <li>Develop solar skills development plan and develop and facilitate the application of quality solar capacity building tools and training materials in partnership with VTIs, universities and centres, regional and national qualification authorities, for both the trainers and the trainees <i>Responsibility for implementation under the conservative scenario: UNIDO and ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Develop adapted solar technologies curricula and the modules under thematic clusters on photovoltaic solar technology to the conditions of a pilot country (see Annex 11 for further details on thematic clusters, PV), ensuring the necessary tools and teaching aids to assist in trainings delivery. <i>Responsibility for implementation under the conservative scenario: UNIDO</i></li> </ul>			

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
	<ul style="list-style-type: none"> <li>Develop solar technologies curricula and the modules under thematic clusters on solar thermal technologies to the conditions of a pilot country (see Annex 11 for further details on thematic clusters, solar thermal), ensuring the necessary tools and teaching aids to assist in trainings delivery. <i>Responsibility for implementation under the conservative scenario: UNIDO</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Develop the curricular and the modules for other thematic areas linked to solar technologies and the regional needs (see Annex 11 for further details on thematic clusters, linked areas with solar energy), ensuring the necessary tools and teaching aids to assist in trainings delivery. <i>To be implemented only under the optimistic scenario</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Establish a Solar Energy Academy for East Africa and Harmonization of Certification for Solar Technicians <i>Responsibility for implementation under the conservative scenario: UNIDO and ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Deliver test modules developed under the above activities in at least 2 GN-SEC Regions to gather feedback, incorporate improvements and implement. The test will gender-focused (targeted at least 40% women and including gender mainstreaming measures) <i>To be implemented only under the optimistic scenario</i></li> </ul>			
	<p><b>Output 2.3:</b> Certified trainings for capacity building institutions and decision-makers (train the trainers)</p>	<ul style="list-style-type: none"> <li>At least two (2) certified solar train-the-trainer workshops for at least 50 experts in five (5) capacity building institutes (Universities, VTIs) (training of trainers) are organised</li> <li>At least three (3) awareness raising events and workshops organised for about 125 decision makers (incl. 40% women)</li> <li>One (1) monitoring tool for the implementation of the certified training</li> </ul> <p><i>IRPF Indicator: TCO.1 Capacity building activities provided = 5</i></p> <p><i>IRPF Indicator: TCO.3 Toolkits and Guidelines produced = 1</i></p>	<ul style="list-style-type: none"> <li>Documentation on train the trainer workshops and training certificates</li> <li>Awareness raising and workshop reports including list of participants (gender disaggregated), events evaluation forms, lessons learnt and recommendations</li> <li>Monitoring tool available to report on training of trainers</li> </ul>	<ul style="list-style-type: none"> <li>Interested and supportive training institutes (universities, VTIs, etc.)</li> <li>Available and resourceful professors to take part in the process</li> <li>Decision makers interested and willing to learn and support the process</li> </ul>
	<p><b>Activities under output 2.3</b></p>			
	<ul style="list-style-type: none"> <li>Conduct certified solar trainings for capacity building institutions with replication effect (e.g., train the trainers), tracking gender-related issues (e.g.: sex-disaggregated data on solar workforce) and best practices for gender mainstreaming of solar energy projects <i>Responsibility for implementation under the conservative scenario: ISA</i></li> </ul>			

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
	<ul style="list-style-type: none"> <li>Conduct three (3) awareness raising and capacity building workshops of about 3 days each for about 125 decision-makers, involved in the approval and enforcement of solar quality infrastructure activities</li> </ul> <p><i>Responsibility for implementation under the conservative scenario: ISA</i></p>			
	<ul style="list-style-type: none"> <li>Develop a tool to monitor the implementation of the certified training, and identify, track and periodically review the performance of trainings in order to promote certified training reports insights and learnings for replication and scaling up</li> </ul> <p><i>To be implemented only under the optimistic scenario</i></p>			
	<p><b>Outcome 3: Increased impact of solar networks and knowledge management systems</b></p>	<ul style="list-style-type: none"> <li>At least one hundred (100) solar users in various GN-SEC regions and internationally are accessing the STAR-C web-portal regularly (at least 40% female users envisaged, and 30% of youth -at least 40% of young women-)</li> <li>At least 100 solar documents are uploaded in the STAR-C web portal and are accessible free of charge (at least 20 documents deal with gender issues)</li> <li>At least three hundred (300) experts in three (3) GN-SEC regions are interacting regularly on solar issues (at least one interaction focuses on gender issues) ( at least 40% female experts envisaged, and 30% of youth -at least 40% of young women-)</li> <li>At least three (3) solar networks in three (3) GN-SEC regions are interconnected and exchange information regularly</li> <li>Partnership with women’s solar energy networking/ associations and joint activities</li> </ul>	<ul style="list-style-type: none"> <li>Energy industry association established and operational in the Pacific</li> <li>Certification of participants by partner organisation</li> <li>STAR C website</li> </ul>	<ul style="list-style-type: none"> <li>ISA and UNIDO succeed to engage leading solar expertise, amass collective knowledge and get enough resources to sustain the operationalisation of the association and academy</li> </ul>



	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
		<p>enhance awareness on GEEW in the sector</p> <p><i>IRPF Indicator: KASA.1 Actors gaining awareness and knowledge = 100</i></p> <p><i>IRPF Indicator: GOV.2 Actors participating in enhanced collaborative settings = 300</i></p>		
	<p><b>Output 3.1:</b> Strengthened regional solar networks</p>	<ul style="list-style-type: none"> <li>At least (3) networks for solar market enablers (e.g. practitioners, suppliers, universities, vocational training centres, installers, financiers, policy makers, rural electrification experts) in three (3) GN-SEC regions operational;</li> <li>Partnership/ network established with women’s solar energy networking/ associations and joint activities conducted, e.g. events, webinars, publications, articles, etc.</li> <li>Regional guideline/manual for the creation of sustainable energy (incl. solar) associations developed and practically tested in the case of one (1) association in the Pacific (e.g. support for Business Plan development); at least one discussion/ event/ webinar on GEEW in solar energy</li> <li>At least three (3) solar related events featuring the participation of one hundred (100) experts are organised (fairs, forum, conference, etc.);</li> </ul>	<ul style="list-style-type: none"> <li>Governing and management document of the solar market enablers documents</li> <li>Governing document of the energy academy in East Africa</li> <li>Guideline for the creation of sustainable energy associations</li> <li>Governing document of the industry association in the Pacific</li> <li>Three networking events reports</li> <li>Partnership agreement signed</li> <li>Study tour report with list of participants, lessons learnt and recommendations</li> </ul>	<ul style="list-style-type: none"> <li>UNIDO and ISA and their respective networks and resources, will be able to amass leading edge solar technology information and foster collaboration between them</li> </ul>

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
		<ul style="list-style-type: none"> <li>At least one (1) study tour organised (at least 40% women participation)</li> </ul>		
	<b>Activities under output 3.1</b>			
	<ul style="list-style-type: none"> <li>Establish networks for solar market enablers (e.g. practitioners, suppliers, universities, vocational training centres, installers, financiers, policy makers, rural electrification experts) in GN-SEC regions, and promote the regular interaction of experts within the GN-SEC regions on solar issues (at least one interaction focuses on gender issues) <i>Responsibility for implementation under the conservative scenario: UNIDO</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Regional guideline/manual for the creation of sustainable energy (incl. solar) associations developed and practically tested in the case of one (1) association in the Pacific (e.g. support for Business Plan development) <i>Responsibility for implementation under the conservative scenario: ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Organise at least three events on solar systems such as energy fairs, forums, conferences, etc. <i>To be implemented only under the optimistic scenario</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Organise study tours to specialized centres in PV and solar thermal in order to reinforce acquired expertise <i>To be implemented only under the optimistic scenario</i></li> </ul>			
	<b>Output 3.2:</b> Partnerships with international solar networks and programs	<ul style="list-style-type: none"> <li>At least one (1) partnership agreement signed to conduct certification of future trainers (train the trainers) <i>IRPF Indicator: TCO.3 Toolkits and Guidelines produced = 1</i> <i>IRPF Indicator: CPO.1 Global fora, workshops, EGM and side events = 3</i></li> </ul>	<ul style="list-style-type: none"> <li>Agreement</li> <li>Meeting minutes</li> </ul>	<ul style="list-style-type: none"> <li>UNIDO and ISA and their respective networks and resources, will be able to amass leading edge solar technology information and foster collaboration between them</li> </ul>
<b>Activities under output 3.2</b>				
<ul style="list-style-type: none"> <li>Partner with other relevant organisations to conduct certification of trained participants (e.g., national energy Centres and Vocational Training Institutions -VTIs) <i>Responsibility for implementation under the conservative scenario: ISA</i></li> </ul>				
<b>Output 3.3:</b> Establishment of a STAR-C solar knowledge platform (ISA and GN-SEC)	<ul style="list-style-type: none"> <li>Web portal created within the joint ISA GN-SEC space</li> <li>Two-way communication available on STAR C website <i>IRPF Indicator: TCO.3 Toolkits and Guidelines produced = 1</i></li> </ul>	<ul style="list-style-type: none"> <li>STAR C website</li> </ul>	<ul style="list-style-type: none"> <li>UNIDO and ISA and their respective networks and resources, will be able to amass leading edge solar technology information and foster collaboration between them</li> </ul>	

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
	<b>Activities under output 3.3</b>			
	<ul style="list-style-type: none"> <li>STAR C website that promotes interaction between members and with ISA with two-way communication protocol. <i>Responsibility for implementation under the conservative scenario: UNIDO</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Establish a joint solar knowledge platform on the ISA and GN-SEC websites <i>To be implemented only under the optimistic scenario</i></li> </ul>			
	<p><b>Outcome 4:</b> Effective STAR-C management and governance structure established and sustained</p>	<ul style="list-style-type: none"> <li>Joint UNIDO ISA Secretariat and Governance established and effectively managed</li> <li>At least USD one (1) million of additional funding for the 2<sup>nd</sup> phase of STAR-C activities mobilized</li> <li>Final external terminal evaluation confirms relevance, efficiency, effectiveness, impact and sustainability of the STAR-C project results</li> <li>Survey among solar actors within at least (3) GN-SEC regions confirm the added value of the STAR-C network activities</li> </ul> <p><i>IRPF Indicator: GOV.1 Institutions established or strengthened = 1</i></p> <p><i>IRPF Indicator: INV.3 New investment leveraged (USD) = 1,000,000</i></p>	<ul style="list-style-type: none"> <li>Recruitment and staffing documents</li> <li>Communication</li> <li>Business plan</li> <li>UNIDO and ISA joint narrative and financial project reports</li> <li>SC meetings minutes</li> <li>Funding agreements</li> <li>Partnership agreements</li> <li>Terminal Evaluation (TE) report</li> </ul>	<ul style="list-style-type: none"> <li>Funds from donors secured for the project</li> <li>Agreement signed between ISA and UNIDO</li> <li>Project team established in both ISA and UNIDO</li> <li>Regular and steady exchange and coordination between the two teams</li> </ul>
	<p><b>Output 4.1:</b> STAR-C Secretariat staffed and activities are effectively implemented</p>	<ul style="list-style-type: none"> <li>Recruited ISA and UNIDO STAR-C team</li> <li>At least 70% of the activities in the annual work plans implemented</li> <li>Annual progress reports developed and approved (incl. financial report)</li> </ul>	<ul style="list-style-type: none"> <li>Recruited ISA and UNIDO STAR-C team</li> <li>At least 70% of the activities in the annual work plans implemented</li> <li>Annual progress reports developed and approved (incl. financial report)</li> </ul>	<ul style="list-style-type: none"> <li>Corporate technical cooperation processes, systems and resources of UNIDO and ISA are adequate and efficient for execution of the STAR C project</li> <li>Smooth cooperation between ISA and UNIDO</li> </ul>

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
		<ul style="list-style-type: none"> <li>Gender awareness and capacity on gender mainstreaming on staff developed</li> </ul> <p><i>IRPF Indicator: PAO.2 Analytical and statistical publications produced = 4</i></p>		
	<p><b>Output 4.2:</b> STAR-C short-term and long-term planning framework and governance implemented</p>	<ul style="list-style-type: none"> <li>Rules of procedures for the Supervisory Committee developed and implemented</li> <li>Supervisory committee meetings at least annually organised (40% female SC membership envisaged)</li> <li>Project Management Unit meet at least every three months</li> <li>Long-term Business (strategic) Plan of the STAR-C developed and adopted</li> </ul> <p><i>IRPF Indicator: PAO.2 Analytical and statistical publications produced = 1</i></p> <p><i>IRPF Indicator: CPO.1 Global fora, workshops, EGM and side events = 2</i></p>	<ul style="list-style-type: none"> <li>Rules of procedures</li> <li>Documentation of SC meetings</li> <li>Business Plan</li> </ul>	<ul style="list-style-type: none"> <li>Corporate technical cooperation processes, systems and resources of UNIDO and ISA are adequate and efficient for execution of the STAR C project</li> <li>Continued interest ISA members in the STAR-C activities and meetings</li> <li>Continued support of the Government of France</li> </ul>
	<b>Activities under outputs 4.1. and 4.2</b>			
	<ul style="list-style-type: none"> <li>Establish project management team at UNIDO (funded through French contribution) with 40% women.</li> </ul> <p><i>Responsibility for implementation under the conservative scenario: UNIDO</i></p>			
	<ul style="list-style-type: none"> <li>Establish project management team at ISA (funded through French contribution) with 40% women</li> </ul> <p><i>Responsibility for implementation under the conservative scenario: ISA</i></p>			
	<ul style="list-style-type: none"> <li>Recruit three (3) STAR-C staff including at least one woman at the three (3) GN-SEC centres (e.g. junior or senior staff, adjusted to funds availability)</li> </ul> <p><i>To be implemented only under the optimistic scenario</i></p>			
<ul style="list-style-type: none"> <li>Recruit STAR C staff in pilot countries (e.g. junior or senior staff, adjusted to funds availability)</li> </ul> <p><i>Responsibility for implementation under the conservative scenario: ISA</i></p>				

	Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Assumptions
	<ul style="list-style-type: none"> <li>Prepare detailed STAR C strategy and annual operational workplans, based on available budgetary resources, achievements and lessons learned and reported needs of ISA member countries and countries covered by GN-SEC centres involved in the project, including a gender mainstreaming action plan <i>Responsibility for implementation under the conservative scenario: UNIDO and ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Develop, promote and start implementing sustainability strategy and business and financing model for continued STAR service delivery post current project period <i>Responsibility for implementation under the conservative scenario: ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Resource and funding mobilization and accounting to donors <i>Responsibility for implementation under the conservative scenario: UNIDO and ISA</i></li> </ul>			
	<b>Output 4.3:</b> Monitoring and reporting	<ul style="list-style-type: none"> <li>Approved annual work plans and progress reports</li> <li>Reporting on the gender mainstreaming strategy and action plan</li> </ul>	<ul style="list-style-type: none"> <li>Approved annual work plans and progress reports</li> <li>Meeting documents</li> </ul>	<ul style="list-style-type: none"> <li>Governance structure of the STAR C established and fully functional</li> </ul>
	<b>Activities under output 4.3</b>			
	<ul style="list-style-type: none"> <li>Establish KPIs for STAR C activities and achievements and establish system for transparent collection and documentation of these KPIs <i>Responsibility for implementation under the conservative scenario: UNIDO and ISA</i></li> </ul>			
	<ul style="list-style-type: none"> <li>Prepare narrative and financial reports on implementation of STAR C project, and regularly monitor the gender mainstreaming action plan <i>Responsibility for implementation under the conservative scenario: UNIDO and ISA</i></li> </ul>			

## Annex 11: Solar technologies curricula and the modules under thematic clusters

(see Output 2.2. and implementation plan)

**Table 21: Solar technologies curricula and the modules under thematic clusters**

Solar technologies curricula and the modules under thematic clusters (see Output 2.2. and implementation plan)		
Solar PV technology	Solar thermal technologies with special focus on Solar Heat for Industrial Processes (SHIP)	Other thematic and complementary areas
a) Introduction to solar PV technology: basic concepts and applications (e.g., solar resource functionality of PV technology, inverters operation, converters, storage systems, Solar Home Systems, mini-grids, hybrid mini-grids, large scale projects, standards, etc.) and electrical security	a) Introduction to SHIP technologies and system: non-concentrating and concentrating collectors linked to necessary system components as storage, field hydraulics, heat exchangers, piping, etc.	a) Clean cooking: improved cooked stoves and certification, efficient cooking stoves (e.g., LPG, solar)
b) Energy planning: PVsyst, PVSol, HOMER Energy, Retscreen, oemof python-library (Open Energy Modelling Framework) for design and optimizations of off-grid and grid-connected projects (e.g. mini-grids, hybrid mini-grids, distributed generation, etc.)	b) Introduction to integration concepts of SHIP on process and supply level; identifying and evaluation the most feasible temperature levels (linked to solar technologies), processes and existing supply systems (demand), complete and partly coverage, assessment of SHIP system performance based on most influencing parameters	b) Solar drying
c) Data collection for energy planning: demand identification and characterization by the application of open software (e.g. ODK – Open data kit)	c) Industrial demand assessment: evaluating the energy system status quo, identifying optimization potentials on supply and demand level as well excess (waste) heat recovery as basis for SHIP design	c) Electric mobility: incorporation of solar technology for charging and compensating electricity consumption.
d) Data treatment for energy planning: demand forecasting by application of private and/or open softwares, such as Matlab, R, eviews.	d) SHIP design methodology: identification of integration points, energy audit as basis for demand assessment, load profile definition, pre-design and basic design, system optimisation based on yearly simulation, storage integration, feasibility studies and assessment (economic, technical, ecologic)	d) Business and start-ups and mentoring.
e) Technical quality assurance: Application and compliance of international standards to ensure safety and technical quality of the technology for off-grid and grid connected projects under the IEC 62257 series: “Recommendations for Renewable Energy and Hybrid Systems for Rural Electrification” and its updated standards.	e) Application of simulation and support tools as Polysun, T*sol, open-source tools and others, linking to weather data as Meteororm and others	e) Climate resilience and GHG emissions reduction
f) Applications for productive purposes: solar pumping to phase out utilization of diesel gensets, solar cooling, solar powered workshops, grinding, milling etc.	f) Data analysis for energy planning: demand forecasting by application of private and/or open-source software, such as Matlab	f) Gender equality and equity (e.g., on gender roles in enhancing solar)

g) Overview of the current regulation and electric market	g) Technical quality of SHIP system design and operation based on necessary steps in pre- feasibility study (e.g. EN16247, ISO 50001) as operation, monitoring and optimization of the system	g) Youth and energy
h) Business models for sustainability of projects and entrepreneurship: Microfranchises, Public Private Partnerships for Development, Energy Services Companies, Cooperatives, and Pay as you Go.	h) Economic and financial project assessment and project development including forms of financing, business models for sustainability of projects and entrepreneurship: Microfranchises, Public Private Partnerships for Development, Energy Services Companies, Cooperatives, and Performance-Based Contracting	h) Circular economy
i) Field training: installations, commissioning, operation and maintenance, troubleshooting as applicable.	i) Field training: commissioning, operation, maintenance, monitoring and optimisation as applicable.	i) Green jobs and entrepreneurship
j) Management: financing, tariffs, taxes, business models, green procurement, promoting sustainability.	j) Management: bankable proposal, financing, tariffs, taxes and management, green procurements.	
k) Development of Detail Project Reports: Introduce quality formats for development of DPRs for accessing finance.	k) Development of Detail Project Reports: Introduce quality formats for development of DPRs for accessing finance.	
l) Financing: The kind of low-cost financing available in the region and introduce how financial institutions assess the economic viability of a solar project for financing.	l) Financing: The kind of low-cost financing available in the region and introduce how financial institutions assess the economic viability of a solar thermal project for financing.	











Project “Structuring of an International Network of Solar Technology and Application Resource Centres”

Activities & Deliverables	Estimated Timeline																																																												
	Conservative scenario (funded by the Government of France)																														Optimistic scenario																														
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36	M37	M38	M39	M40	M41	M42	M43	M44	M45	M46	M47	M48	M49	M50	M51	M52	M53	M54	M55	M56	M57	M58	M59	M60	
<b>OUTCOME 4: Effective STAR-C management and governance structure established and sustained</b>																																																													
<b>Output 4.1: STAR-C secretariat staffed and activities are effectively implemented</b>																																																													
4.1.1	Establish project management team at UNIDO (funded through French contribution) with 40% women.																																																												
4.1.2	Establish project management team at ISA (funded through French contribution) with 40% women.																																																												
4.1.3	Recruit three (3) STAR-C staff including at least one woman at the three (3) Gh-SEC centres (e.g. junior or senior staff, adjusted to funds availability)																																																												
4.1.4	Recruit STAR C staff in pilot countries (e.g. junior or senior staff, adjusted to funds availability)																																																												
<b>Output 4.2: STAR-C short-term and long-term planning framework and governance implemented</b>																																																													
4.2.1	Prepare detailed STAR C strategy and annual operational workplans, based on available budgetary resources, achievements and lessons learned and reported needs of ISA member countries and countries covered by Gh-SEC centres involved in the project, including a gender mainstreaming action plan.																																																												
4.2.2	Develop, promote and start implementing sustainability strategy and business and financing model for continued STAR service delivery post current project period.																																																												
4.2.3	Resource and funding mobilization and accounting to donors.																																																												
<b>Output 4.3: Monitoring and Reporting</b>																																																													
4.3.1	Establish KPIs for STAR C activities and achievements and establish system for transparent collection and documentation of these KPIs.																																																												
4.3.2	Prepare narrative and financial reports on implementation of STAR C project, including the monitoring and the gender mainstreaming action plan.																																																												

## Annex 13: Detailed project budget

Table 22 provides the detailed project budget<sup>i</sup>. Please refer section C4/Table 14 with regard to descriptors for budget lines and outputs. Contribution of the Government of France (split between UNIDO and ISA) is only allocated for the 2.5 years of the conservative scenario as indicated throughout the document.

**Table 22: Detailed project budget**

Budget Line s	Description	Y1		Y2			Y3			Y4			Y5			Conservative scenario: Budget for 2,5 years under the contribution of the Government of France		Optimistic scenario: Budget for a second period of 2,5 years by contribution of other donors. Funding from other donors to be mobilised (e.g. EU)
		Contribution of Government of France (1st year)		Funding from other donors to be mobilised (e.g. EU)	Contribution of Government of France (2nd year)		Funding from other donors to be mobilised (e.g. EU)	Contribution of Government of France (half a year)		hal a year if additional funds are secured	4th year if additional funds are secured			5th year if additional funds are secured				
		UNIDO (France)	ISA		UNIDO (France)	ISA		UNIDO (France)	ISA		Funding from other donors to be mobilised (e.g. EU)	UNID O	ISA	Funding from other donors to be mobilise d (e.g. EU)	UNID O	ISA	Funding from other donors to be mobilised (e.g. EU)	
<b>OUTCOME I: Improved quality and certification frameworks for PV and solar thermal products and services</b>																		
1100	Staff & Intern Consultants	24,000			12,000			6,000		12,000			12,000			42,000	-	24,000
1101	Staff & Intern Consultants	9,500													9,500	-	-	
1500	Local travel			13,000			11,600			3,000			3,000			-	-	30,600
1600	Staff Travel	3,600	2,000	13,000	2,000	2,000	11,600								5,600	4,000	24,600	
1700	Nat.Consult./Staff	6,000		52,000	2,000		116,000			15,000			15,000			8,000	-	198,000
2100	Contractual Services	50,028	17,500	52,000	24,000	17,500	116,000	14,000		30,000			30,000			88,028	35,000	228,000
3000	Train/Fellowship/Study															-	-	-
3500	International Meetings		500			500										-	1,000	-
4500	Equipment	14,400		130,000			324,800									14,400	-	454,800
5100	Other Direct Costs															-	-	-
7100	Contingencies															-	-	-
<b>Sub-Total OUTCOME 1</b>		<b>107,528</b>	<b>20,000</b>	<b>260,000</b>	<b>40,000</b>	<b>20,000</b>	<b>580,000</b>	<b>20,000</b>	<b>-</b>	<b>60,000</b>	<b>-</b>	<b>-</b>	<b>60,000</b>	<b>-</b>	<b>-</b>	<b>167,528</b>	<b>40,000</b>	<b>960,000</b>
<b>OUTCOME 2: Enhanced capacities of institutions to offer certified quality solar curricula and training</b>																		



Project "Structuring of an International Network of Solar Technology and Application Resource Centres"

1100	Staff & Intern Consultants	21,000			11,000												32,000	-	-
1101	Staff & Intern Consultants	9,500															9,500	-	-
1500	Local travel	2,100	2,500		1,100	2,500	15,500			21,500							3,200	5,000	37,000
1600	Staff Travel	2,100	1,500		1,100	1,500											3,200	3,000	-
1700	Nat.Consult./Staff	6,300		10,000	3,300		31,000			43,000			7,500				9,600	-	91,500
2100	Contractual Services	52,500	50,000	30,000	33,000	50,000	217,000		22,370	301,000			22,500				85,500	122,370	570,500
3000	Train/Fellowship/Study	5,250			2,750												8,000	-	-
3500	International Meetings	5,250			2,750		15,500			21,500							8,000	-	37,000
4500	Equipment						31,000			43,000							-	-	74,000
5100	Other Direct Costs																-	-	-
7100	Contingencies																-	-	-
<b>Sub-Total OUTCOME 2</b>		<b>104,000</b>	<b>54,000</b>	<b>40,000</b>	<b>55,000</b>	<b>54,000</b>	<b>310,000</b>	<b>-</b>	<b>22,370</b>	<b>430,000</b>	<b>-</b>	<b>-</b>	<b>30,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>159,000</b>	<b>130,370</b>	<b>810,000</b>
<b>OUTCOME 3: Increased impact of solar networks and knowledge management systems</b>																			
1100	Staff & Intern Consultants	14,300	-		4,667												18,967	-	-
1101	Staff & Intern Consultants	556	-														556	-	-
1500	Local travel		-	4,000	1,556												1,556	-	4,000
1600	Staff Travel		-			3,500	45,000			54,667							-	3,500	99,667
1700	Nat.Consult./Staff		-				90,000			109,333							-	-	199,333
2100	Contractual Services	12,600	15,000	28,000	9,334	18,000	120,000	9,000		145,778							30,934	33,000	293,778
3000	Train/Fellowship/Study		-														-	-	-
3500	International Meetings	1,824	-	8,000		3,500	45,000			54,667							1,824	3,500	107,667
4500	Equipment		-														-	-	-
5100	Other Direct Costs		-														-	-	-
7100	Contingencies		-														-	-	-
<b>Sub-Total OUTCOME 3</b>		<b>29,280</b>	<b>15,000</b>	<b>40,000</b>	<b>15,556</b>	<b>25,000</b>	<b>300,000</b>	<b>9,000</b>	<b>-</b>	<b>364,444</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>53,836</b>	<b>40,000</b>	<b>704,444</b>
<b>OUTCOME 4: Effective STAR-C management and governance structure established and sustained</b>																			
1100	Staff & Intern Consultants	54,973	40,350	2,500	52,154	40,400	2,500	40,000									147,127	80,750	5,000
1101	Staff & Intern Consultants	5,027															5,027	-	-
1500	Local travel		2,000			1,000											-	3,000	-

Project "Structuring of an International Network of Solar Technology and Application Resource Centres"

1600	Staff Travel		2,000		13,038	2,000		10,000	3,000								23,038	7,000	-
1700	Nat.Consult./Staff		5,350	30,000		5,350	30,000			30,000							-	10,700	90,000
2100	Contractual Services		17,550			14,000											-	31,550	-
3000	Train/Fellowship/Study																-	-	-
3500	International Meetings		-														-	-	-
4500	Equipment		4,000														-	4,000	-
5100	Other Direct Costs		-														-	-	-
7100	Contingencies		10,000			10,000			3,000								-	23,000	-
<b>Sub-Total OUTCOME 4</b>			<b>60,000</b>	<b>81,250</b>	<b>32,500</b>	<b>65,192</b>	<b>72,750</b>	<b>32,500</b>	<b>50,000</b>	<b>6,000</b>	<b>30,000</b>	-	-	-	-	-	<b>175,192</b>	<b>160,000</b>	<b>95,000</b>
<b>Total Outcomes (1+2+3+4)</b>			<b>300,807</b>	<b>170,250</b>	<b>372,500</b>	<b>175,748</b>	<b>171,750</b>	<b>1,222,500</b>	<b>79,000</b>	<b>28,370</b>	<b>884,444</b>	-	-	<b>90,000</b>	-	-			
<b>UNIDO/ISA Support Costs (8%)</b>			24,065	13,620	29,800	14,060	13,740	97,800	6,320	2,270	70,756	-	-	7,200	-	-			
<b>Total Costs</b>			<b>324,872</b>	<b>183,870</b>	<b>402,300</b>	<b>189,808</b>	<b>185,490</b>	<b>1,320,300</b>	<b>85,320</b>	<b>30,640</b>	<b>955,200</b>	-	-	<b>97,200</b>	-	-			
<b>TOTAL BUDGET</b>																	<b>555,556</b>	<b>370,370</b>	<b>2,569,444</b>
<b>SUPPORT COSTS</b>																	<b>44,444</b>	<b>29,630</b>	<b>205,556</b>
<b>TOTAL BUDGET INCL. SUPPORT COSTS</b>																	<b>600,000</b>	<b>400,000</b>	<b>2,775,000</b>

<sup>1</sup> The provided ISA grant to UNIDO is flexible and will allow shifts between budget lines within the four outcome areas without approval of the donor up to a threshold of 10% (please note that outcomes are defined as outputs in the UNIDO SAP budget system). Budget shifts between outcome areas require approval by the donor. In line with the UNIDO cost-recovery policy, another Euro 24,583 was included for technical services under budget line 11.01 in the project budget. No UN levy is charged. To allow UNIDO to kick-start the project activities, an upfront payment of at least 70% shall be provided to UNIDO at the beginning. UNIDO will report to ISA/France in line with the conservative budget scenario and project outcomes 1, 2, 3 and 4. UNIDO will not report on any other co-funding operated by other partners.