

ISA

ANNUAL REPORT 2020



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Designed and conceptualised by **RenewableWatch**

FOREWORD



The year 2020 has been a challenging one for the entire global community with COVID-19 spreading to every corner of the world and the economic activity coming to a standstill. Despite restrictions, the International Solar Alliance (ISA) has made a remarkable progress in 2020 in implementing its various programmes and activities.

Prioritising primary healthcare, when the entire world is battling the COVID-19 crisis, the ISA CARES initiative has been launched which aims to solarise at least one Primary Healthcare Centre (PHC) per district per county in each of its Least Developed Countries (LDC) and Small-Island Developing States (SIDS) member countries.

In a landmark move, the ISA decided on the universalisation of its membership by extending it to include all members of the United Nations and making ISA a truly global organisation. As of September 2020, 68 countries have signed and ratified the ISA Framework Agreement. This Agreement talks about mobilising USD 1,000 billion of investment by 2030. To help realise this goal, ISA has conceptualised World Solar Bank dedicated to fund solar power projects across its member countries. Thus, solar power deployment will not remain concentrated in the developed parts of the world but also in nations devoid of robust regulations and policy frameworks.

Solar power deployment is gaining traction across the world with large solar parks and utility-scale projects, and cross-border interconnection is assuming more importance. Against this backdrop, the Prime Minister of India, Mr Narendra Modi laid out the vision for the One Sun One World One Grid (OSOWOG) initiative at the first Assembly of the ISA in 2018. The ISA, as the premier global solar agency, has directed its efforts in this direction and is in the process of developing a long-term vision, an implementation plan, a road map and an institutional framework for taking this initiative forward in a phased manner. The ISA envisions the application of solar power for the greatest transformative impact on social welfare and economic growth by solarisation of the last mile. ISA's programmes across diverse areas including agriculture, affordable finance, rooftop systems, minigrids, energy storage, e-mobility, and even solar parks are all designed so as to promote the growth of solar power across all its member countries in a wide array. Further, ISA's various initiatives in capacity building would ensure the availability of skilled manpower across all facets of solar power deployment.

The ISA has had an impressive growth since its inception and is working towards supporting all its member countries in the advancement of their solar power deployment. Going forward, it will continue in its endeavor making use of its position as an effective global solar platform to promote the widespread adoption of solar power for addressing the looming concerns of climate change and helping in post-covid green recovery.

Let us all make the sun shine brighter!

Upendra Tripathy
Director General

ISA VISION AND MISSION

VISION STATEMENT

The vision of the ISA can best be understood within the context of the guiding principles enshrined in the Framework Agreement on the Establishment of the ISA. Backed by strong political impulse and resolve of the member countries, the ISA will lead the world towards energy security, energy transition and universal energy access, thus, impacting millions of lives the world over by providing solutions in the form of affordable solar energy. Access to energy will improve health services, positively impact education and facilitate economic growth of over a billion people who still live without electricity, including access to clean cooking mediums, and hundreds of millions more who live with unreliable or expensive power which poses a key barrier to economic development in emerging economies. The ISA will draw its strength to implement actual projects on the ground, from its strong partner ecosystem which has multilateral banks, financial institutions, actors, think tanks and UN bodies augmented with the unique strength of private and public institutions.

The ISA has the mandate to make cutting edge technological advancements in solar available to its member countries by facilitating knowledge exchange, as well as to make recommendations for diversifying the global value chains thereby encouraging mass manufacturing in identified regions. By virtue of its collaborative strength, the ISA will work towards mitigating obstacles in implementing its strategies. Global reach and representation is the backbone of the ISA which enables it to provide specific innovative solutions for every geography represented in the alliance. ISA's coordinated actions through its programmes, projects, initiatives and activities will aim at better harmonising and aggregating demand for solar finance, solar technologies, innovation, research and development and capacity building by achieving simple and measurable targets. 'United', the members of the ISA will stand together to establish an effective mechanism of coordination and decision-making drawing from the power of the sun in the true spirit of considering 'the world as one family.' In the true spirit of multilateralism, the ISA as the fastest growing body enabling energy transition; is the solution the world has long enough waited for.

ISA's vision for a large-scale solar revolution hinges on creating a facilitative international ecosystem that enables access to science and economic resources, reducing the cost of technology and capital, facilitating price reduction, and enabling development of storage technology and innovation. With its scale and authoritative understanding of the energy transition opportunities of diverse economies, ISA is the world's foremost energy transition catalyst.

Essentially, ISA's vision is a world powered by the Sun. A solar revolution that encompasses energy usage in the arena of health, agriculture, education, industry, trade, business and all areas of livelihood and empowerment in a world with energy security for all and energy poverty for none.

MISSION STATEMENT

Mission of the ISA is to provide a platform for cooperation among member countries in mobilising more than USD 1,000 billion worth of investment in the solar sector in member countries by 2030 by bringing down the cost of technology and capital through project formulation and demand aggregation while playing the role of an Incubator, Accelerator, Facilitator and Enabler (IAFE) to assist the member countries as per their need.

OUR MOTTO:

**LET US TOGETHER
MAKE THE SUN SHINE
BRIGHTER.**

**EVERY HOME, NO
MATTER HOW FAR
AWAY, WILL HAVE A
LIGHT AT HOME.**

Key future landmarks:

1. One Sun One World One Grid:

Envisioned by the Prime Minister of India, Mr Narendra Modi, the One Sun One World One Grid initiative calls for connecting solar energy supply across borders, enabling nations to access and share solar energy, based on their respective demand and generation. Declared at the First Assembly of the ISA in 2018, the initiative seeks to capitalise upon the time-of-day variability of solar energy, and brings together large-scale solar deployment, battery storage and other technologies, so that nations harness solar energy more effectively. In line with this, the ISA is working with Climate Parliament and many countries towards building consensus, helping launch energy policy initiatives, and setting up a global energy cooperation framework.

2. Solarising the last mile:

Bringing and scaling off-grid power solutions in regions where grid-infusion of renewables may not be viable but is critical in bringing initial electricity access to millions who may be otherwise underserved. The ISA envisions scaling simple devices such as solar panels and appliances and making them more accessible where they are needed. This will have the greatest transformative impact on social welfare and economic growth.

Realising ISA's vision and mission:

Towards bringing its vision to fruition, the ISA is supporting the enactment of solar-friendly roadmaps, policies and regulations, sharing best practices, helping create international consensus on common standards, and mobilising investments.

In the spirit of multilateral cooperation, it is synergising the strengths and capabilities of diverse global actors, including financial institutions, public and private sector, bilateral and multilateral organisations, corporates, industry, and other stakeholders. To make the solar energy transition cost-viable, it is harmonising and aggregating demand for solar finance, technologies, and innovation among its member nations.

The points below give a measurable shape to ISA's vision and mission in terms of concrete deliverables by 2025.

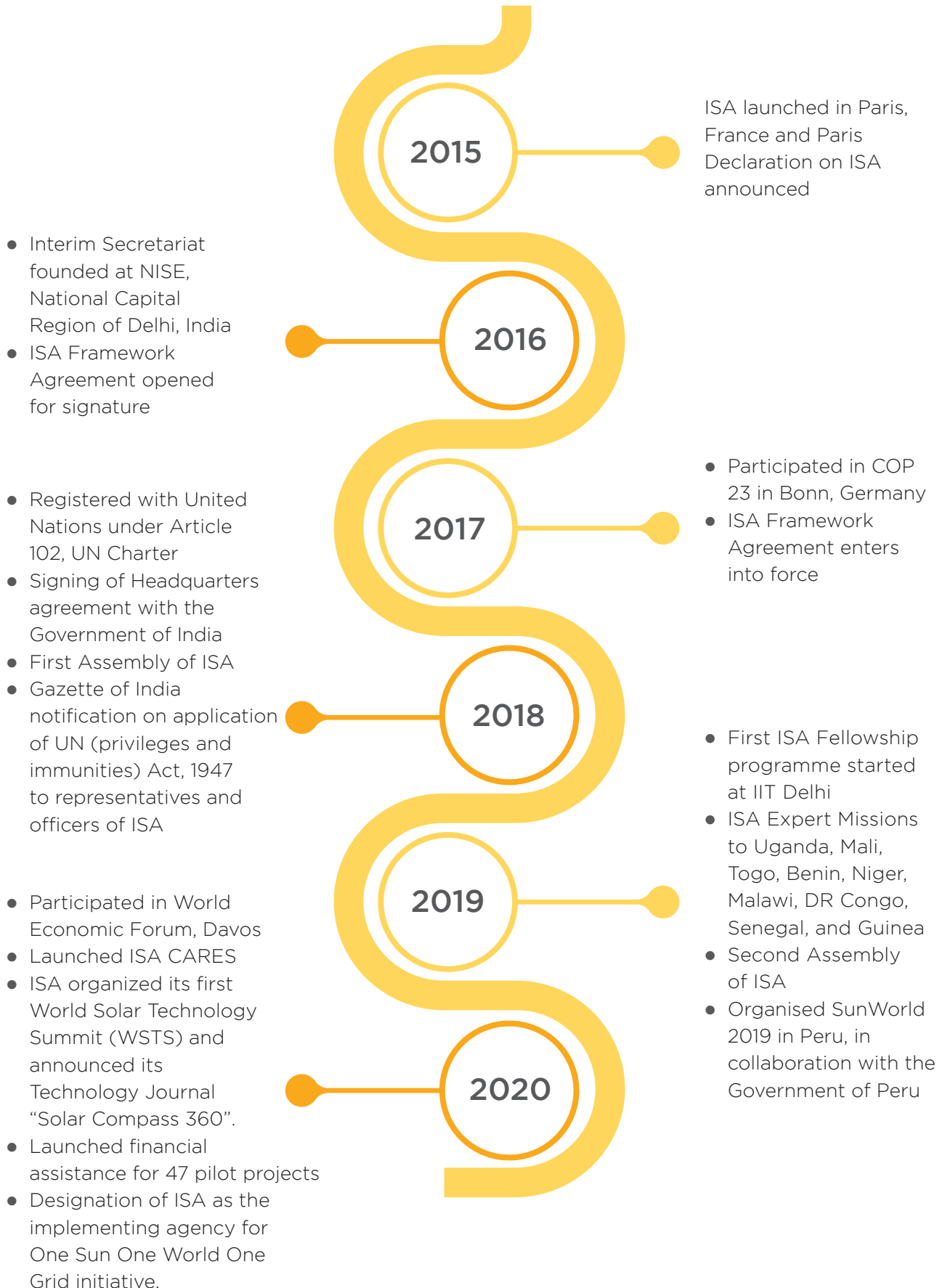
1. Universal Membership to all UN member countries joining the ISA.
2. Inauguration of the headquarter building and construction by the host country.
3. Recruitment of global staff members to have a multilateral Secretariat.
4. Financial sustainability through various avenues including membership fee and host country grant.
5. Resource mobilisation of USD 100 million to assist LDCs, SIDS and other member countries.
6. 1,001 solar projects in member countries to attract investment, create employment and reduce carbon footprint.
7. Developing a roadmap for USD 1,000 billion investment by 2030.
8. Assisting member countries by demand aggregation in programme related goods and services.
9. Supporting a World Solar Bank to mobilise USD 50 billion a year through co-financing.
10. USD 500 million worth EXIM Bank of India projects to be selected by the ISA.
11. Establishing STAR-C, INFOPEDIA and SUNWORLD as major brands.



Mission of the ISA is to provide a platform for cooperation among member countries in mobilising more than USD 1,000 billion worth of investment in the solar sector by 2030.



ISA'S JOURNEY SO FAR



ISA MEMBER COUNTRIES

As of September 2020, 68 countries have signed and ratified the ISA Framework Agreement, while 19 countries have signed the ISA Framework Agreement.

List of member countries who have signed and ratified the ISA Framework Agreement:

- | | | | |
|----|---|----|--|
| 1 | People's Democratic Republic of Algeria | 36 | Republic of Mali |
| 2 | Commonwealth of Australia | 37 | Republic of Mauritius |
| 3 | Peoples Republic of Bangladesh | 38 | Republic of Mozambique |
| 4 | Republic of Benin | 39 | Republic of Myanmar |
| 5 | Burkina Faso | 40 | Republic of Namibia |
| 6 | Republic of Burundi | 41 | Republic of Nauru |
| 7 | Kingdom of Cambodia | 42 | The Netherlands |
| 8 | Republic of Cameroon | 43 | Republic of Niger |
| 9 | Republic of Chad | 44 | Federal Republic of Nigeria |
| 10 | Union of Comoros | 45 | Independent State of Papua New Guinea |
| 11 | Republic of Cote d'Ivoire | 46 | Republic of Peru |
| 12 | Republic of Cuba | 47 | Republic of Rwanda |
| 14 | Republic of Djibouti | 49 | Independent State of Samoa |
| 15 | Commonwealth of Dominica | 50 | Democratic Republic of Sao Tome and Principe |
| 13 | Congo Democratic Republic of | 51 | Kingdom of Saudi Arabia |
| 16 | Arab Republic of Egypt | 52 | Republic of Senegal |
| 17 | Republic of El Salvador | 53 | Republic of Seychelles |
| 18 | Republic of Equatorial Guinea | 54 | Federal Republic of Somalia |
| 19 | Federal Democratic Republic of Ethiopia | 55 | Republic of South Sudan |
| 20 | Republic of Fiji | 56 | Democratic Socialist Republic of Sri Lanka |
| 21 | France | 48 | St. Lucia |
| 22 | Gabonese Republic | 57 | Republic of Sudan |
| 23 | Republic of The Gambia | 58 | Republic of Suriname |
| 24 | Republic of Ghana | 66 | United Republic of Tanzania |
| 25 | Republic of Grenada | 59 | Togolese Republic |
| 26 | Republic of Guinea | 60 | Kingdom of Tonga |
| 27 | Cooperative Republic of Guyana | 61 | Republic of Trinidad and Tobago |
| 28 | Republic of Haiti | 62 | Tuvalu |
| 29 | Republic of India | 64 | United Arab Emirates |
| 30 | Jamaica | 63 | Republic of Uganda |
| 31 | Japan | 65 | United Kingdom |
| 32 | Republic of Kiribati | 67 | Republic of Vanuatu |
| 33 | Republic of Madagascar | 68 | Bolivarian Republic of Venezuela |
| 34 | Republic of Malawi | | |
| 35 | Republic of Maldives | | |

Note: The names of member countries are in alphabetical order.

GOVERNANCE STRUCTURE AND LEADERSHIP

ISA ASSEMBLY

The Assembly of the ISA is the apex decision-making body which comprises representatives from each member country. The Assembly deliberates matters of substance achievement of ISA objectives, its functioning, approval of operating budget, assessment of the implementation and aggregate effect of the Programmes and other activities and more.

Thereupon, the Assembly determines the course of coordinated actions to be taken for the development and furtherance of the ISA Programmes. The Assembly convenes annually at the Ministerial level at the seat of the ISA and may also meet under special circumstances as asserted by the ISA Framework Agreement.

- First Assembly of the ISA was held from October 2-5, 2018 in Greater Noida, National Capital Region, India.
- Second Assembly of the ISA was convened from October 30 to November 1, 2019 at New Delhi, India.

ISA SECRETARIAT

The Secretariat comprises of the Director General who is the Chief Executive Officer and other staff. The Director General is responsible to the Assembly for a term of four years. The key assignments of the Director General include providing support for the organization and functioning of the Secretariat.

Key functions of the Secretariat:

- Assist the National Focal Points in preparing the programmes, proposals and recommendations submitted to the Assembly
- Provide guidance and support to members in the implementation of each programme, including for the raising of funds
- Act on behalf of the Assembly, or on behalf of a group of members participating in a particular programme, when so requested by them; and in particular establish contacts with relevant stakeholders
- Set and operate all means of communication, instruments and cross-cutting activities required for the functioning of the ISA and its programmes, as approved by the Assembly.

The ISA is supported in its efforts by Committees – the Standing Committee and the Regional Committees (for Africa, Asia and the Pacific, Europe and Others, and the Latin America and the Caribbean regions).

MEMBERSHIP OF THE ISA COMMITTEES

Standing Committee



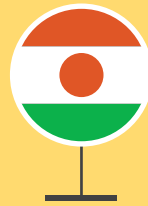
Chair
India



Co-Chair
France



Vice-President - Africa region
Togo



Additional Member - Africa region
Niger



Vice-President - Asia & Pacific region
Tonga



Additional Member - Asia & Pacific region
Sri Lanka



Vice President - Europe & Other regions
UK



Additional Member - Europe & Other regions
Netherlands



Vice-President - Latin America & the Caribbean region
Peru

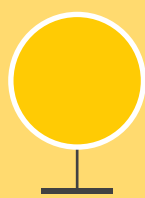


Additional Member - Latin America & the Caribbean region
Venezuela

Regional Committee for Africa region



Chair
Togo



Vice-Chair
To be elected

Regional Committee for Asia & Pacific region



Chair
Tonga



Vice-Chair
To be elected

Regional Committee for Europe & Other regions



Chair
UK



Vice-Chair
To be elected

Regional Committee for Latin America & Caribbean region



Chair
Peru



Vice-Chair
To be elected

As of August 2020, two meetings each of the Standing Committee have taken place. The second meeting took place in October 2019. In the same month, meetings of Regional Committees (Asia & Pacific Region, African Region and Latin America & Caribbean region) also took place.

Note: All the Members from the region are represented in the respective regional Committees.

ISA IN 2020 - KEY HIGHLIGHTS

OCTOBER 2019

- The second meeting of the ISA standing committee took place on October 15, 2019 in New Delhi. The dignitaries from France, Peru, Togo, Tonga, Sri Lanka, Niger and Venezuela attended this meeting.
- On October 21, 2019, the 24th Sun Meet of the ISA was organised at the Vice President Office in New Delhi.
- The second assembly of the ISA was hosted on October 30-31, 2019 in New Delhi. 57 member countries met at the 2nd Assembly of the ISA in New Delhi, India.
- France and the Netherlands pledged USD 100 million to SRMI of the World Bank in partnership with AFD, ISA and IRENA.
- An MoU was signed between the ISA and the Indian Institute of Public Administration for capacity-building of ISA member countries.



NOVEMBER 2019

- Climate Investment Funds and the ISA signed an agreement to promote solar energy deployment across 121 developing countries.
- Infopedia, an online platform dedicated to the dissemination of information, best practices and knowledge on solar energy was launched.
- The delegates from the second assembly visited the DMRC office and Tata Power Delhi Distribution Limited, New Delhi.
- DG ISA held a comprehensive session with ITEC participants from 25 countries for the ITEC course on Learning South-South Cooperation.
- Marking the beginning of a new era in renewable energy in Latin American & Caribbean region, the Sun World Expo hosted by the ISA and MEM Peru, was conducted successfully in Lima, Peru.



DECEMBER 2019

- DG ISA attended meetings and signed several MoUs at COP 25 in Madrid.
- ISA signed an MoU with the Madhya Pradesh government and institutionalised the Acharya Vinoba Bhave MP International Solar Pump Award.
- Samoa became the 85th country to sign the ISA framework agreement.
- ISA MTech Fellows met key policy makers and implementers in Madhya Pradesh, India. They also visited various solar project sites in the state for onsite learning.



JANUARY 2020

- The ISA signed an MoU with the International Water Management Institute in Colombo, Sri Lanka, on “Solar Irrigation for Agriculture Resilience”.
- The ISA conducted its 25th Sun Meet at the ISA Secretariat on January 15, 2020.
- DG ISA attended the World Economic Forum at Davos.
- The ISA team attended the World Future Energy Summit in Abu Dhabi, UAE.
- ISA Pavilion inaugurated by President of the ISA Assembly, Mr R.K. Singh and French Ambassador to the UAE, Mr Ludovic Pouille.



FEBRUARY 2020

- The 26th ISA Sun Meet was held on February 4-5, 2020 in New Delhi on the sidelines of the CLEAN - India Energy for All Summit.
- The ITEC training programme in solar energy was held from February 10-28, 2020 in collaboration with the Government of India.
- DG ISA engaged with diplomats from BIMSTEC member states at the ISA Secretariat on February 11, 2020.
- The ISA and UNIDO conducted a consultation workshop on the operationalisation of ISA's STAR-C programme at the International Conference Centre, Paris, France.



MARCH 2020

- The ISA hosted the ITEC programme to enlighten an august gathering on India's leadership in solar power and technology and highlighting the country's preparedness to achieve its renewable energy target.
- The event was attended by members from the Research and Information System for Developing Countries, Forum for Indian Development Cooperation and other agencies.



APRIL 2020

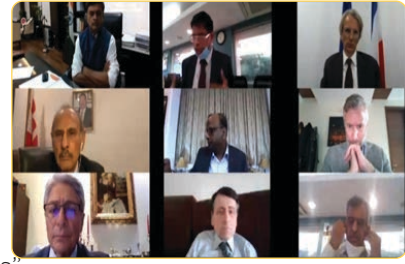
8 ISA initiatives were green flagged, these include:

- Solar PV Skill Development Initiative
- Making Solar Bankable Initiative
- Undergraduate Program for SIDS and LDCs
- Action Plan for developing up to 20 GW of solar parks
- ISA Advisory to global manufacturers of ventilators in the use of Solar Kits
- ISA Cares Initiative
- Global Price Discovery Bid for 47 million Solar Home Systems
- New ISA website



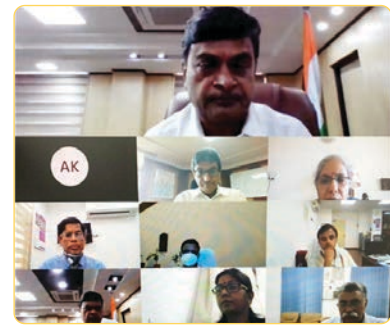
MAY 2020

- Virtual meetings with Ministerial representatives from Egypt, Malawi, and Sri Lanka on solar parks and solar water pumps, and Mali for deployment of solar parks.
- Discussions with NFP Côte d'Ivoire, Gambia, Somalia, Sudan, Comoros and Uganda on solar roadmaps.
- The Third Standing Committee Meeting of the ISA was held via video conference on May 27, 2020.
- The first Solinar was organised on “Photovoltaic Markets”.
- NHPC pledged INR 10 million towards ISA Corpus fund under the “Early bird corporate investment scheme”.



JUNE 2020

- The second and third Solinars were organised on “COVID-19 and its impacts on Solar Markets” and “Photovoltaics Basics”.
- The 27th ISA SUN meet was held virtually on the theme “Affordable Financing for Solar Projects”.
- ISA-CSCA was green flagged to build strategic partnerships between investors and policymakers.
- A virtual summit was organised on “Global Vision 2025 & Roadmap for World Solar Bank”.
- Discussions with NFP Djibouti, Mozambique and Nigeria on solar roadmaps.



JULY 2020

- The ISA launched Global Price Discovery Tender for 47 million Solar Home Systems and 250 million LED bulbs for ISA member countries.
- The fourth and fifth Solinars were organised on “Photovoltaic off-grid systems” and “Financing Productive Uses of DRE”.
- The ISA launched its first Online Bankers Training Program for ‘Asia Pacific region’.
- Notification on Universalization of ISA Membership was issued by the depositary, MEA on July 31, 2020.
- Australia donated AUD \$92,000 towards the ISA cares initiative. The ISA Secretariat organised a high level panel discussion on July 2, 2020 in partnership with UNAIDS.



AUGUST 2020

- The ISA successfully conducted the Prebid Meeting for Global Price Discovery Tender for 9,347,000 Solar Home Systems.
- The ISA launched second and third batches of Online Bankers Training Program.
- President of the ISA Assembly, Mr R. K. Singh, addressed the Curtain Raiser of ISA’s first World Solar Technology Summit to be held on September 8, 2020.



ISA's first World Solar Technology Summit (WSTS) was held on September 8, with over 10,500 participants and 50 speakers from across the globe joining the deliberations virtually to discuss how to accelerate the adoption of affordable and sustainable clean green energy across the world.



President of the ISA Assembly, Mr R. K. Singh was joined by the Vice Presidents of ISA from Africa, Asia Pacific and the Latin American and Caribbean Region during the inaugural address. The Co-President of the Assembly, France's Minister for Ecological Transition sent a video message to the Summit.

The inaugural was followed by the Global CEO's session which witnessed discussions between the CEOs of the world's largest corporations that are working towards the promotion of solar energy integration with other renewables and storage solutions.

Four technical sessions saw a galaxy of renowned academicians, scientists, researchers as well as industry leaders deliberating on the future prospects of the solar PV technology, vision for solar power up to 2030 and beyond, exploring low cost electricity, disruptive solar technologies and application of solar power beyond the power sector. The event ended with a valedictory session.

Key announcements during the event:

- Five PSU's in India's hydrocarbon sector, ONGC, IOCL, BPCL, Hindustan Petroleum and GAIL, joined ISA's Coalition for Sustainable Climate Action (ISA-CSCA) and pledged a total of USD 5 million as corporate partners. Moreover, half of India's public sector undertaking owned fuel stations to be solar powered in five years.
- The Prime Minister of India, Mr Narendra Modi reiterated India's commitment to renewable energy in spite of lowest per capita carbon emission in the world.
- A tripartite agreement was announced between India's Ministry of New and Renewable Energy, the World Bank and the ISA on One Sun, One World, One Grid.
- ISA signed three more partnership agreements during the event with International Institute for Refrigeration, Paris; Global Green Growth Institute (Republic of Korea); and NTPC (India).
- ISA's Technology Journal "Solar Compass 360" was announced at the event.
- DG ISA presented the ISA technology charter, which will be essentially a technology task force looking into the technology needs of the ISA member countries.

SOLAR POWER DEPLOYMENT - A GLOBAL OVERVIEW

Renewable energy had another record-breaking year in 2019, as installed power capacity grew more than 200 GW (mostly solar PV) – its highest increase ever. Although several key countries and regions, such as China, Europe and the United States, have driven these trends and continued to have a large impact in 2019, renewable power is growing in all corners of the world. Globally, 32 countries had at least 10 GW of renewable power capacity in 2019, up from only 19 countries a decade earlier.











Following a year of stable demand, the solar PV market increased 12% in 2019 to a record 115 GW (direct current), for a total of 627 GW. During the year, solar PV accounted for around 10.7% of total generation in Honduras and substantial shares also in Italy (8.6%), Greece (8.3%), Germany (8.2%), Chile (8.1%) and elsewhere. By year's end, enough capacity was in operation worldwide to produce an estimated 2.8% of global electricity generation.

Global new investment in renewable power and fuels (not including hydropower projects larger than 50 MW) totaled USD 301.7 billion in 2019, up 5% from 2018. Including investments in hydropower projects larger than 50 MW, total new investment in renewable power and fuels was at least USD 316.7 billion. Considering total financing of renewable energy capacity (but excluding hydropower larger than 50 MW), China again had the largest share (30%), followed by the United States (20%), Europe (19%) and Asia-Oceania (16%; excluding China and India). Smaller shares were seen in Africa and the Middle East (5%), the Americas (excluding Brazil and the United States, 4%), India (3%) and Brazil (2%).

Top 5 countries (2019)

Top 5 countries in cumulative renewable energy capacity as of end of 2019 (including hydropower)	China	United States	Brazil	India	Germany
Top 5 countries in cumulative renewable capacity as of end of 2019 (excluding hydropower)	China	United States	Germany	India	Japan
Top 5 countries in cumulative solar PV capacity as of end of 2019	China	United States	Japan	Germany	India
Top 5 countries in annual solar PV capacity in 2019	China	United States	India	Japan	Vietnam

Important indicators pertaining to renewable energy and solar capacity globally

Parameter	2015	2016	2017	2018	2019
 Cumulative renewable energy capacity (including hydropower) (GW)	1,856	2,017	2,197	2,387	2,588
 Cumulative renewable energy capacity (excluding hydropower) (GW)	785	921	1,081	1,252	1,437
 Cumulative hydropower capacity (GW)	1,071	1,096	1,112	1,135	1,150
 Cumulative wind power capacity (GW)	433	487	540	591	651
 Cumulative bio-power capacity (GW)	106	112	121	131	139
 Cumulative solar PV capacity (GW)	228	303	405	512	627
 New investment (annual) in renewable power and fuels (in USD billion)	312.2	241.6	326	296	301.7
 Estimated share of renewable power (excluding hydropower) in global electricity production	6.60%	7.90%	7%	10.40%	11.40%
 Total people employed in renewable energy sector (cumulative) (million)	9.69	9.8	10.3	11	NA*
 Annual CO ₂ emissions reduction due to cumulative solar capacity ¹ (million tonnes)	278	370	495	625	766

*Data not available

Sources: Renewables 2020 Global Status Report; Renewables 2019 Global Status Report; Renewables 2018 Global Status Report; Renewables 2017 Global Status Report; CEA report on carbon emissions from power sector

¹Assuming solar capacity CUF of 17%; CO₂ emissions per kWh = 0.88 kg (Weighed average CO₂ emissions from all conventional sources as reported by CEA, India)

PROVIDING SUSTAINABLE SOLUTIONS TO SAIL THROUGH THE COVID-19 CRISIS

COVID IMPACTS ON GLOBAL SOLAR MARKETS

COVID-19 has caused major ructions across the energy sector and threatens to undermine efforts to accelerate clean energy transition.

The key critical challenges faced by the solar sector include:

- Diminished growth prospects due to uncertainty over future electricity demand
- Higher offtake risk including delayed payments, PPA renegotiation and curtailment
- Slowdown in distributed solar market due to loss of capacity and suspension in aid programmes
- Lack of competitive financing solutions

The ISA collaborated with Bridge to India to produce an impact assessment of COVID-19 on the global solar market. **The report titled “COVID-19: Impact on Global Solar Market” was published in May 2020.** It examines the operational and financial impact of the COVID-19 pandemic on the solar power sector across the world.

This report assesses delays in construction progress, capacity addition outlook and financial challenges for players across the value chain. Finally, it proposes solutions and explains the steps needed to drive a solar-led energy transformation.

The solar sector was estimated to add a record capacity of 130-135 GW in 2020. However, the pandemic has caused several operational and financial setbacks bringing down the estimates by 20 per cent to around 105 GW.

ISA CARES INITIATIVE

Objective of ISA Cares Initiative: As countries battle the COVID-19 crisis, the ISA has launched a pilot initiative ISA CARES with the primary objective of solarising at least one Primary Healthcare Centers (PHC) per district in each of its LDC and SIDS member countries.

The ISA aims to reduce the initial cost through grant support as well as enable proper maintenance and after-sales support through capacity building in member countries. The ISA will aid upgradation of healthcare facilities in LDCs and SIDS by solarising hospitals, pharmaceutical units, laboratory facilities and any other necessary infrastructure such as research divisions.

Two phase ISA CARES initiative:

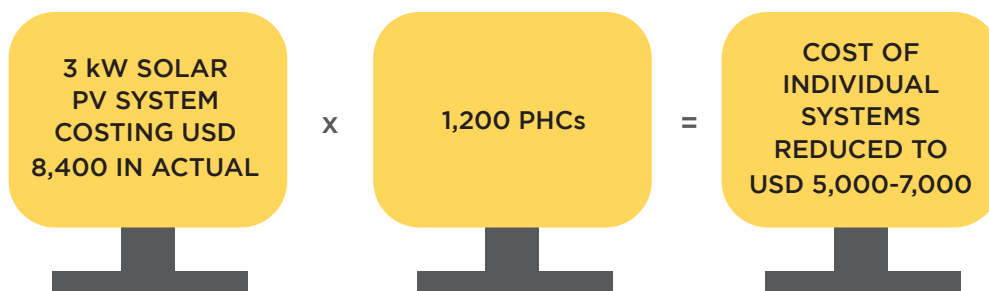
Phase I: The solarisation of PHCs (through grant support) to boost to healthcare services and also to set up a mechanism and streamline the process for adoption of solar energy by other institutions. The ISA will spearhead Phase I of the initiative by performing two critical activities:

- Grant mobilisation and deployment
- Technical assistance for project implementation

Phase II: Proactively support large scale adoption of solar energy (through development capital) across major institutions (including healthcare facilities) in ISA member countries, thereby leveraging the learnings and established processes from Phase I.

Funding mechanism

ISA will aim to solarize ~1,200 PHCs across its member LDCs and SIDS. The demand aggregation and bulk procurement will help in reducing the cost of individual solar installations by 20-25%.



The ISA aims to mobilise capital of USD 10 million for the ISA CARES initiative.

The ISA shall mobilise the necessary capital for the ISA CARES initiative through crowdfunding from individuals, corporates, foundations and countries. It will reach out to its existing corporate partners and potential partners for mobilising funds. ISA's financial and procurement regulations and procedures, based on UN systems, will apply to the procurement of goods and services related to the initiative

Implementation mechanism

ISA will

- ☑ Promptly aggregate demand for the solarisation of PHCs in SIDS and LDC countries based on various parameters such as peak load, available rooftop space and the number of beds
- ☑ Invite international competitive bid with global standards and specifications to ensure participation of reputed organisations from across the world
- ☑ Collaborate with global organisations such as Global Off-Grid Lighting Association (GOGLA), UNDP, etc. and empanel their accredited agencies for the deployment of solar solutions for healthcare centres.
- ☑ Conduct capacity building and training programmes in SIDS and LDC member countries for installation, commissioning, and operations and maintenance of solar systems
- ☑ Constitute an Oversight Committee chaired by the Director-General of the ISA, to oversee the initiative from concept initiation to project execution in member countries

DEVELOPING A FINANCIAL TOOL FOR GLOBAL IMPACT

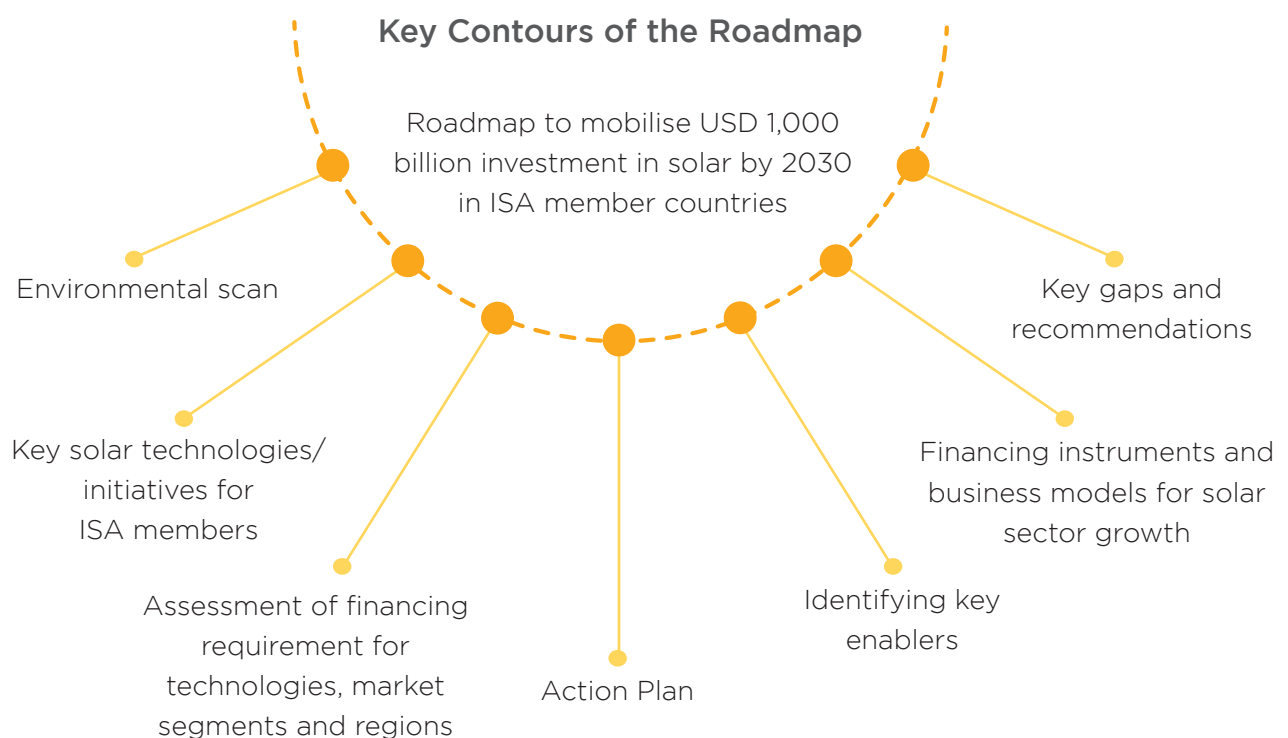
ROADMAP TO MOBILISE USD 1,000 BILLION

ISA's target is to mobilise USD 1,000 billion investments to finance 1,000 GW of global solar capacity by 2030. The Framework Agreement of the ISA mandates to facilitate mobilisation of USD 1 trillion by 2030 in the solar energy sector. The ISA Secretariat has partnered with World Resources Institute (WRI) to develop a 'Draft Roadmap for mobilisation for USD 1 Trillion by 2030'.

The Roadmap will examine ways to exploit opportunities in a post-COVID world to build back better and the role of international cooperation in taking solar power to investment scale.

Approaches identified for implementing the Roadmap:

- Gap analysis [based on required solutions and current actors and institutions]
- SWOT analysis for the ISA itself and for ISA countries
- Options for ISA engagement (with indicative resource implications):
 - Coordination mechanism (alliance of stakeholders) – including strengthened coalitions of finance partners (public and private) and mechanisms for south-south or triangular cooperation
 - Supra-national lobby or advocate
 - Independent technical assistance and advisory body
 - Financing mechanism
- Potential impacts
- Monitoring and evaluation



EASE OF DOING SOLAR

The ISA had conceptualised Ease of Doing Solar (EoDS) report for its member countries. In 2019, a pilot report was prepared which covered four ISA member countries and the same was presented in the second General Assembly of the ISA. The ISA now intends to present the EoDS report covering all member countries in its 3rd General Assembly to be held in October 2020. The report contains country-specific snapshots that assess a country's preparedness in attracting and sustaining investments in the solar space. The data is researched and collated using a combination of secondary as well as primary sources.

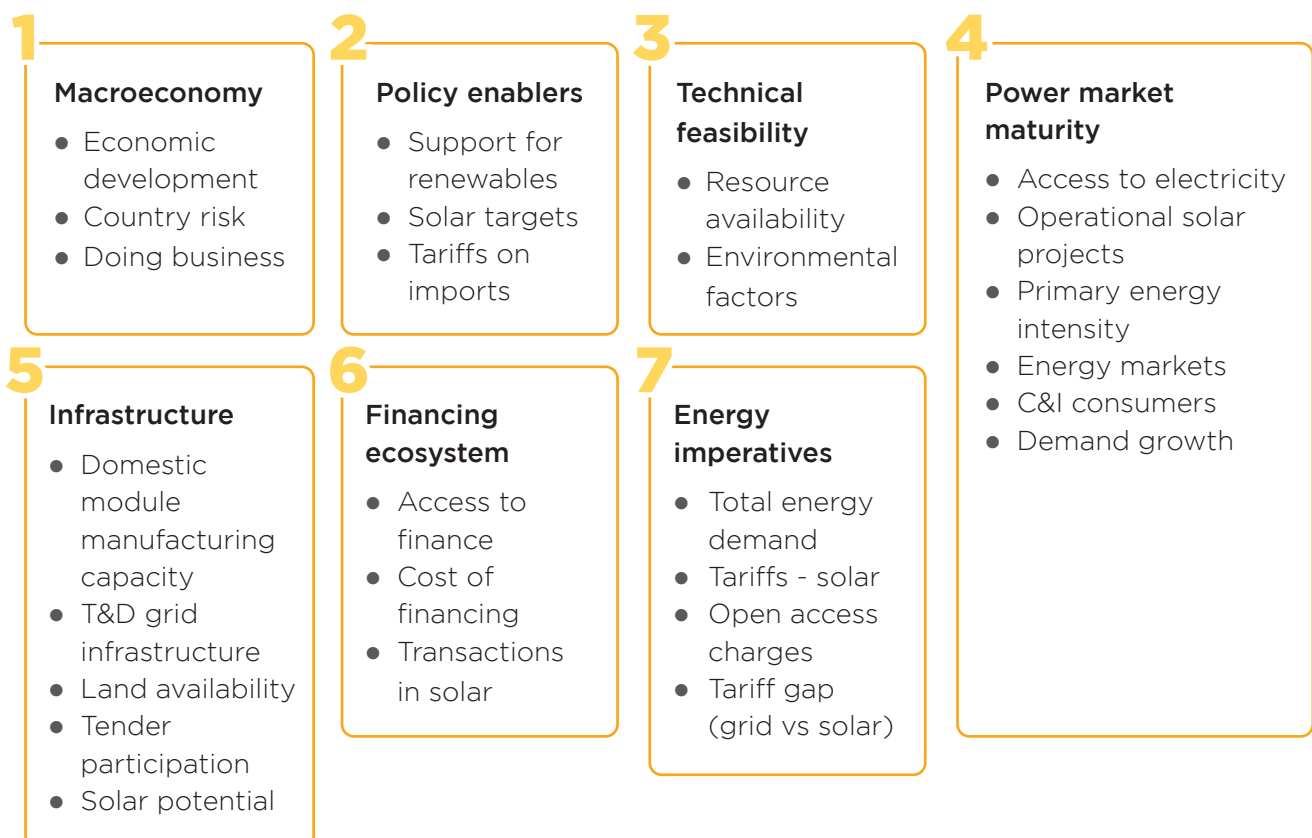
The key features of this report include:

- A holistic view of a country's solar ecosystem with an objective to assess its preparedness to attract and sustain investments in solar energy.
- Helps ISA member countries in identifying key roadblocks, understanding global best practices, and formulating effective policies and regulations to build a sustainable solar energy ecosystem.
- The EoDS framework evaluates the ISA member countries on seven key drivers: 1) Macroeconomy 2) Policy enablers 3) Technical feasibility 4) Power market maturity 5) Infrastructure 6) Financing ecosystem and 7) Energy Imperatives.

More than 70 parameters have been used to evaluate these seven key drivers. Each of these parameters demonstrate the countries' readiness for large-scale deployment of solar power.

The framework has been developed based on the review of: 1) Ease of Doing Business by the World Bank 2) State Investment Promotion Agency Framework by Invest India 3) Global Investment Competitiveness Report by the World Bank and 4) Renewable Energy Country Attractiveness Index by EY

The framework is depicted below:



WORLD SOLAR BANK

The ISA has aggregated demand for solar pumps, solar rooftop, solar mini-grids, solar parks and solar home systems that translates to around USD 5.5 billion of financing requirement for implementation of projects in member countries. The ISA Secretariat is currently in discussion with member countries and MDBs such as World Bank, AFD, ADB, Exim Bank, AfDB etc. to facilitate financing for the implementation of above-mentioned solar projects. However, member countries are facing difficulties in mobilising finance due to smaller and distributed nature of the projects and due to lack of robust regulations and policy framework in most of the countries.

In this background, the ISA intends to establish World Solar Bank, dedicated to fund solar projects in ISA member countries. The presence of a financial institution dedicated for funding solar projects shall accelerate deployment of solar projects across all member countries thus preventing concentration of solar capacities in a few geographies. Further, a dedicated Solar Bank would also be crucial for achieving the Hon'ble PM of India's vision of "One Sun One World One Grid" (OSOWOG), by providing and facilitating affordable finance for projects.

The total Authorized Capital for the World Solar Bank would be USD 100 billion with subscribed capital of USD 50 billion, paid-in capital of USD 10 billion and USD 40 billion callable capital.

Genesis of the World Solar Bank

DG ISA met the Hon'ble Prime Minister of India, Mr Narendra Modi in July 2019 and briefed him about the idea of World Solar Bank. The prime minister advised that the idea may be explored further to accelerate solar deployment in ISA member countries.

The ISA Secretariat will take the proposal for establishing a World Solar Bank to the Standing Committee and ISA Assembly for guidance and advice.

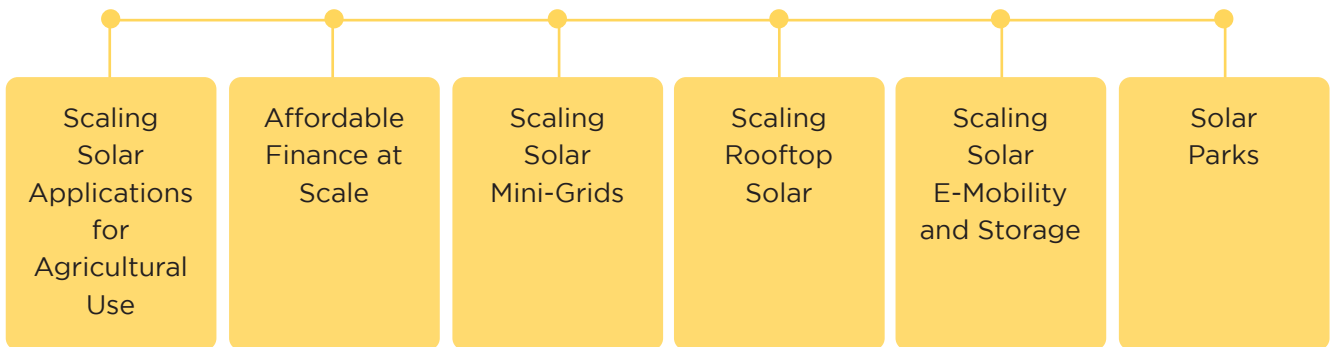
Hon'ble President of the ISA assembly also stressed the fact that solar energy is going to play a crucial role in achieving SDG 7 and 13 and a dedicated global financial institution such as World Solar Bank would indeed reduce both the cost of technology and the cost of finance for solar deployment.

António Guterres, Secretary-General of the United Nations, commended India's plans for a World Solar Bank that would mobilise USD 1 trillion of investments in solar projects over the coming decade.



IMPLEMENTING PROGRAMMES FOR ISA MEMBERS

The ISA, at present, is working on the following six programmes:



The ISA has aggregated the demand for these programmes as given below:

Project demand	Total demand aggregated	Number of countries that submitted demand
Solar Pumps	272,579 (in numbers)	22
Solar Rooftop	1 GW	11
Solar Mini-Grids	2 GW <i>Out of 10 GW demand aggregated for mini-grids only 2 GW has been considered</i>	9
Solar Parks	2 GW	9
Solar Home Systems	47 million (in numbers)	53

“
This total demand translates to around USD 5.5 billion of financing requirement.”



SCALING SOLAR APPLICATIONS FOR AGRICULTURAL USE

ISA's Programme on Scaling Solar Applications for Agriculture Use (SSAAU) focuses on providing greater energy access and a sustainable irrigation solution to farmers through the deployment of solar water pumping systems in member countries. To make the projects viable and affordable, the ISA has aggregated demand from various countries in an effort to substantially reduce system costs.

Energy Efficiency Services Limited (EESL), a Government of India enterprise, has been hired to provide its services for conducting an international competitive bid for price discovery of solar pumps on behalf of the ISA. This bid was floated on May 16, 2019 by EESL and concluded on September 27, 2019.

The world's price discovery of off-grid solar pumps

In 2019, the ISA brought down the price of 272,579 solar water pumps by almost half through a first-of-its-kind global price tender. The bid brought down the price of the pumps by USD 670 to USD 800, per horsepower, a record low. Now within their budget, the pumps can give farmers a reliable source of power for irrigation. If member countries have cohesive policy and regulations in place then these solar pumps can enable them to sell surplus electricity to discoms, creating a secondary source of income, and a means to earn from their uncultivable land, while greatly mitigating spending on diesel.

Over 90 per cent of the pumps will be shipped to nations in Africa, including the Democratic Republic of Congo (80,000 pumps), Benin (50,000 pumps) and Sudan (50,000 pumps), Sub-Saharan nations notable for their high energy poverty.

The ISA has developed draft prefeasibility reports of 25 member countries in line with their aggregated demand for solar water pumps and shared eight business models of the solar water pumping systems with all ISA member countries to assist them in selecting suitable business model with regard to the need of the respective country.

ISA Country Missions

The ISA secretariat, supported by global advisory firm KMPG, has concluded 10 expert country missions out of the targeted 15 countries. The countries were Uganda, Mali, Togo, Benin, Niger, D R Congo, Malawi, Guinea, Senegal and Ghana. The missions were undertaken to get a 'buy-in' for ISA's programmes (especially solar water pumping programme) and to understand the ground level challenges and issues.

ISA Solar Cooling Initiative

The ISA Solar Cooling Initiative (I-SCI) was launched in August 2019 for the development of solar-powered and efficient cold chains to prevent post-harvest food loss, increase farmer incomes and reduce overall greenhouse gas emissions and short lived climate pollutants from refrigeration systems. Promoting science-based policy, for the development of solar-powered and efficient cold chains based on life cycle climate performance analysis will provide access to sustainable cooling infrastructure for all. To develop demonstration projects and aggregate demand, ISA has created

an ISCI Select Group under the leadership of Mr. Pawanexh Kohli, the former founding CEO of the National Centre for Cold Chain Development (NCCD) and Mr. Didier Coulomb, the Director General of the International Institute of Refrigeration (IIR).

Going forward

- The ISA will facilitate affordable finance for the implementation of solar water pumps, through meetings with MDBs/DFIs to explore ways to finance solar pumping projects.
- After a successful pilot project of 100 solar water pumps, the ISA is coordinating with Agricool Bank in Senegal to finance farmers to replace 4,000 diesel pumps with solar water pumps for Banana Farming under the guidance of ANER through ADB, NFP, ANFP and the ISA Contact Point in Senegal.

AFFORDABLE FINANCE AT SCALE

Financial assistance to member countries for demonstration projects

The ISA Secretariat intends to provide financial assistance to 47 LDCs and SIDS member countries for the implementation of pilot projects across three major themes - ISA CARES Initiative, ISA Solar Water Pumping Programme (SWPS), and ISA Solar Cold Storage Initiative or any other innovative project(s) of particular importance to the concerned member country. The ISA aims to promote innovative technologies and efficient business models for various solar applications through the implementation of these three categories of demonstration projects. The technical and financial assistance to be provided would cover expenditure up to USD 50,000 per member country in LDCs and SIDS. Currently the ISA Secretariat is working on finalising operational modalities for implementing demonstration projects.

Support to NFPs for project preparation

The Standing Committee, in its third Meeting considered and approved modalities proposed by the ISA Secretariat for providing technical and financial assistance up to USD 5,000 per LDCs and SIDS member countries for preparing project proposals. This preparatory support will be provided on request by the NFP and on reimbursement basis only.

SAARC Development Fund Technical Assistance of USD 0.5 Million

The SAARC Development Fund (SDF) will provide technical assistance of USD 0.5 million to five prospective member and member countries of the ISA. The technical assistance is proposed to be implemented jointly with the Asian Development Bank.

IBSA Facility for Technical Assistance of USD 2 Million

The ISA Secretariat has submitted a project proposal for technical assistance from the India Brazil South Africa (IBSA) Facility for USD 2 million for the deployment of Solar Water Pumping Systems demonstration projects in ISA member countries, in partnership with UNDP, under Programme 1 of the ISA. An in-principle approval for technical assistance has been received from the IBSA Fund.

SCALING SOLAR MINI-GRIDS

Supported by Intellecap, the ISA conducted an initial assessment of the mini-grid potential of five African countries. The assessment also included government policies and supportive schemes, initiatives by development partners and other stakeholders to support mini-grid development and potential challenges and areas of intervention in each of these regions.

The ISA has now proposed to undertake a detailed feasibility study for mini-grids at selected regions in Africa. Broadly, this study will take into consideration:

- A detailed site assessment and feasibility study (including technical, financial and socio-economic viability)
- Detail engineering design and drawings (of power generation and distribution system)
- Cost estimation of the proposed energy system
- Productive End-Use (PEU) baseline preparation inclusive of its demand

The ISA Secretariat has also drafted and circulated a Model Mini-Grid Policy to National Focal Points after due approval. The ISA Secretariat is supported by Deloitte, a global advisory firm, to develop a robust implementation plan for the mini-grids programme.

The ISA proposes to support high quality installations at a reduced cost, along with the provision of after-sales services using the support of the mini-grid ecosystem. The following implementation approach is envisioned:

- Discussion with government, financial institutions and other stakeholders to bring them on board to support mini-grid installations in the region.
- Demand aggregation services based on various parameters such as peak load, available land, number of installations, etc.
- Quality control to ensure system's performance: Accreditation and empanelment of enterprises to ensure the installation of high-quality panel, batteries and other balance of system equipment.
- Capacity building to ensure maintenance and after-sales support: Capacity building and training programmes on installation, commissioning, operations and maintenance of mini-grids in Africa.

The ISA also developed a business model for solarization of mini-grids being operated through DG sets in Fiji and shared it with National Focal Point of Fiji under the guidance of Contact Point of Fiji.

Price Exploratory Global Bid for Providing Energy Access to 47 Million households by Solar Home Systems

Despite the concerted efforts by all stakeholders, the world may not be able to achieve SDG 7 of providing sustainable and affordable energy for all by 2030. The ISA launched the initiative of providing energy access to 47 million households that will remain without energy access despite all efforts. On July 20, 2020, EESL has invited Price Exploratory Global bid for 47 million solar home systems for ISA member countries.

SCALING SOLAR ROOFTOP

The Solar Rooftop Programme aims to promote, assess potential, harmonize demand and pool resources for scaling up rooftop solar (both offgrid and grid-connected) in ISA member countries.

Capacity building

The ISA has organised many national and international workshops and Sun Meets to share best practices, create learning opportunities and to sensitize member countries about rooftop solar. The ISA organised capacity building programmes to train 187 people from member countries. The programmes covered rooftop training modules and best practices manual for entrepreneurs, bankers and discoms in member countries.

ISA's impact

ISA's efforts have resulted in the demand aggregation of over 1 GW submitted by 11 member countries. These countries have been sent detailed questionnaire to help them prepare PFRs, along with a pipeline of bankable projects. Also, the work on proposals to install rooftop solar projects on the buildings of diplomatic offices in Delhi has begun.

Outreach and sharing best practices

The programme has been circulated to member countries and video conferences have been conducted with ISA's National Focal Points in member countries that are interested in the initiative. The ISA has also undertaken mission visits to African countries. The discussions have covered respective energy scenarios, ease of doing business, institutional capacity and the regulatory and policy landscapes of member countries.

In India, the ISA organised webcasts with Madhya Pradesh Urja Vikas Nigam Limited to aid solar development by educational institutions and industries.

An ISA-ISRO software application tool to enable member countries to calculate their solar generation has been showcased by various organisations. The ISA has also facilitated the installation of 2 kWp portable rooftop system with storage (plug and play type) developed by GIZ, on the NISE Campus.

Case study: Solar Rooftop Installations in the Maldives

The Maldives, a recent signatory to the ISA's Framework Agreement, is entirely dependent on imported fuel. The Scaling-up Renewable Energy Program (SREP) is supporting the Maldives Strategic Action Plan 2019-2023, which seeks to increase the share of renewable energy by 20% by 2023 compared to 2018 levels, install at least 10 MW of solar PV under net metering regulations, and reduce fuel usage for electricity generation by 40 million liters of oil. Further, it envisions that all new public infrastructure projects shall have a provision to install renewable energy projects. The SREP has successfully installed 7.5 MW of solar generation capacity in the Maldives' outer islands and 6.5 MW in the Greater Male region.

The ISA developed a draft feasibility study for solar rooftop systems of 16 African and Pacific Countries with the assistance of PwC and shared with all respective National Focal Points.

SCALING SOLAR E-MOBILITY AND STORAGE

As a structural base to start implementing the programme, the ISA Secretariat has launched two studies:

- An assessment of member countries' capacities and needs in terms of solar electric mobility and storage;
- A benchmarking of the existing technologies and projects on solar e-mobility, solar powered charging infrastructure and storage systems.

In line with these objectives, the first two studies under the programme have been structured to provide a reference point under which future endeavours or missions of the ISA will be planned.

For the first study, a questionnaire has been circulated to member countries and the ISA partners to better assess the needs and areas of opportunities regarding solar e-mobility, energy storage and charging infrastructure. It consists of four sections: e-mobility, energy storage, battery storage and comments or suggestions that the members would like to express to the ISA regarding this programme. For each section ISA has asked whether there are policies in place to promote the development and deployment of the technology, whether there are any agreements in place with international organisations, about their current capacity, needs and obstacles faced to scale-up these technologies.

It will be complemented with the one designed by the French National Institute for Solar Energy (INES) which focuses on the financial aspect of solar projects. Based on the results, an economic trend will be identified at a regional level. This will make it easier for future decision makers and stakeholders to make a financial decision on solar projects as well as areas of need and opportunities for growth.

The second benchmark study, aims at presenting an overview of the current state of the existing technologies and innovations developed in the ISA member countries. The scope of this study includes solar e-mobility, energy storage, and charging infrastructure technologies in all 195 countries of the world. The energy storage technologies include batteries (Li-ion, lead-acid), hydrogen, flywheels, thermal, pumped hydropower and V2G. The charging infrastructure technologies include both ongrid and offgrid.

Both the International Energy Agency and the UN Environment have shown interest in the studies since it will be a way to further corroborate their projections and results presented in their annual reports and to use the results to implement pilot projects. They have accepted to review the results as this document would be the first of its kind putting an emphasis on how e-mobility and energy storage can be coupled with solar energy to up-scale its deployment.

SOLAR PARKS

Six on-ground mounted projects were considered by the Second Assembly of the ISA held on October 30, 2019. The programme envisages facilitating member countries to develop ground-mounted projects in a standalone or in a solar park model.

During the year, President of the ISA Assembly, Mr. R.K. Singh flagged off an initiative to implement the solar park programme in 10 countries in the initial phase. These countries are Togo, Mali, Ghana, Sudan, Egypt, Malawi, Sri Lanka, Uganda, Rwanda, and Cuba. The ISA has prepared brief analysis reports of identified countries for the first round of discussion with member countries.

The ISA has also conducted meetings on solar parks with countries like Togo, Mali, Sudan, Sri Lanka, Uganda, Rwanda, Malawi, Gambia, Mozambique, Somalia, Comoros, Cote d` Ivoire and Nigeria. Moreover, draft pre-feasibility reports are being prepared by the ISA and shared with member countries for review and validation. The ISA is also sharing project proposals included in draft pre-feasibility reports based on a country's generational potential. It has endorsed NTPC Limited to member countries for project management consultancy.

Under this programme, projects will be set up by independent project developers, selected through an appropriate process, who then will sign the long-term power purchase agreements (PPA) with power utilities. Although there are no financial obligations for the governments of the member countries, they are, nonetheless, entrusted to arrange parties for signing the PPAs, identify well-connected land for the development of the project and ensure payment security under the PPA.

Till date, the ISA has aggregated demand for 1380 MW of solar generation capacity from solar parks in Mali (500 MW), Togo (500 MW), Sudan (200 MW), Mozambique (30 MW), Gambia (100 MW) and Niger (50 MW). The preparatory work on solar parks with a cumulative capacity of 780 MW to be set up across Mali and Togo has started.



Case Study: Unlocking 280 MW of solar potential in Togo

The Togolese Republic, a West African nation, has appointed NTPC, India's largest power utility, as its PMC for about 280 MW of solar power projects. Togo is working to achieve universal electricity access by 2030, with a substantial focus on increasing its solar power generation, for which it is working with ISA. NTPC Limited will conduct activities to select solar project developers on a competitive basis to set up projects on ownership basis and enter into a PPA with government-designated entities. With this initiative, Togo has become the first ISA member nation to avail of NTPC's services.

ISA ACTIVITIES FOR PROMOTING SOLAR DEVELOPMENT

ISA STAR-C

In 2020, the ISA Secretariat has focussed on operationalising the ISA Solar Technology and Application Resource Centre (ISA STAR C) network, working with the United Nations Industrial Development Organization (UNIDO) to do so.

This network will work to build capacity and facilitate the scaling up of solar technologies to meet the national sustainable energy and climate priorities of ISA member states, in accordance with Sustainable Development Goals (SDGs), particularly SDG7 (sustainable energy) and SDG13 (climate action) and the Paris Climate Agreement.

This project has been supported to date by the Agence Française de Développement through a €50,000 grant, by UNIDO through in-kind support as well as their investment of €20,000 towards the development of the project document and cooperation agreement for supporting the operationalisation of this project. Related support was provided by the European Union (€300,000) to develop the ISA Infopedia, a 'one stop shop' for information and training on solar.

Progress and achievements:

Following the Second Assembly, the ISA has:

- Commenced operationalisation of the STAR C project, including:
 - Working closely with UNIDO to develop the operational framework and project document underpinning this project
 - Convening a consultation workshop on the development of the ISA STAR-C project in Paris from February 25-27, 2020, generously hosted by the Government of France
 - Developing the programme for and launching the STAR C Webinars (the Solinars) to support the capacity development of ISA members during COVID-19 - reaching approximately 440 people to date - with more sessions planned.
- Promoted the ISA Infopedia platform at COP25.

Future plans

ISA's focus for 2021 is to rapidly scale up the operationalisation of the STAR C project, working with UNIDO and its members. It is working to create a world-leading network - one that supports its members to build capacity to deploy solar technology, create green jobs and transition to a cleaner, more sustainable energy sector and economy.



Operationalising ISA's STAR-C program

ISA and UNIDO convened a consultation workshop on the development of the ISA STAR-C programme in Paris from February 25-27, 2020. The workshop was generously hosted by the Government of France.

Representatives from 28 ISA member countries and organisations, including from UNIDO's Global Network of

Sustainable Energy Centres and representatives from industry foundations, attended the workshop. Workshop participants discussed their needs and expectations from the proposed STAR-C programme, as well as the key challenges to the large-scale deployment of solar technology.

INFOPEDIA

The ISA successfully launched Infopedia, an online platform created to disseminate information and best practices on solar energy. It is supported by the European Union. It also enables policymakers, ministers, and corporate leaders from ISA countries to interact and collaborate.

The key features of Infopedia are as follows:

- **Country counters:** It is a dedicated space for every member country to present the most complete solar energy profile of itself
- **Solar Information Hub:** It is an electronic library dedicated to solar energy. It provides links to reports, videos and other information resources on best practices, policies, financing, technologies, tools, and data from around the globe.
- **Solar Academy:** It is a comprehensive learning management system allowing ISA and its partners to create and host free-to-access courses on solar technology. It has become a go-to website for courses (including Star-C content) on solar energy.
- **ISA Communication Tools:** It provides tools and methodologies to facilitate communication among member countries.
- **Solar Directory:** The ISA Infopedia Solar Directory is an online registry providing information and contact details of global organisations (including corporates, NGOs, research centres and financing institutions) that are involved in the promotion or development of solar energy.

ITEC SCHEME

The Government of India has been supporting the ISA by providing training to master trainers in the field of solar energy through the Indian Technical and Economic Cooperation (ITEC) Scheme. The duration of the training is 21 days and all costs are borne by the Government of India.

Further, the ISA has proposed that many member countries need long term deputation of solar experts from India. The Ministry of External Affairs may be requested under the ITEC programme to facilitate long-term visits of such professionals to other countries under this scheme.

ITEC training programme

The ISA welcomed 30 participants from 15 ISA member countries including Bangladesh, Benin, Burkina Faso, Maldives, Mozambique, Sudan, Nigeria, Niger, Madagascar, Tonga, Venezuela, Guyana, Nauru, Eritrea and Malawi, who joined the ITEC training programme in Solar Energy for Master Trainers for ISA Member Countries between February 10-28, 2020.

The ITEC Training Programme for Master Trainers for ISA Member Countries concluded on February 28, 2020, where delegates were trained over a period of two weeks in order to contribute actively towards capacity building efforts of ISA by training more people in their respective countries.

The ISA also hosted the ITEC Programme on March 2, 2020 to enlighten an august gathering on India's leadership in solar power and solar technology and highlighting the country's preparedness to achieve its renewable energy target. The event was attended by members from the RIS as well as the Forum for Indian Development Cooperation (FIDC).

Achievements

Region	No of participants
Africa Region: 26 countries participated out of 50	160
Asia and Pacific Region: 7 countries participated out of 34	37
Latin America and Caribbean: 5 countries participated out of 32	17
Participation by non-member country (Afghanistan)	1
39 countries participated	215

ISA SOLAR FELLOWSHIP FOR MID-CAREER PROFESSIONALS

The objective of the fellowship is to contribute towards the long-term development needs of member countries, through the creation of skilled and qualified professional manpower for the management of solar energy projects, programmes and policies. The fellowship is designed to meet the requirement of policymakers, planners, administrators and managers from government, public and private institutions who have displayed public commitment and demonstrated leadership for their country's development and private institutions.

Solar energy management fellowships are being offered to mid-career professionals from ISA member countries, who then pursue M.Tech in Renewable Energy Engineering & Management (REEM) at a premier institute in India. Upon graduating, the fellows are expected to contribute to the enhancement of solar energy expertise and policy formulation in their home countries.

Progress and timelines

Currently, 21 fellows from 18 ISA member countries are pursuing M.Tech (REEM) at IIT Delhi. This is the first batch which commenced on July 22, 2019 and will end in 2021. The knowledge partners of the fellowship are the National Institute of Solar Energy and The Energy and Resources Institute. The coursework includes subjects such as technology, policy and regulations, finance, project management, social issues, system integration and simulations and modelling.

Fellowship timeline:

- **First 12 months:** In a university or in any other R&D, technical or policy related organisation or institution in India
- **Next 6 months:** At the ISA Secretariat to obtain work experience in the implementation of ISA programmes
- **Final 6 months:** In the candidate's home country for the preparation of a solar roadmap



Study tours for fellows

As part of the ongoing coursework, M.Tech Fellows travelled to the Indian state of Madhya Pradesh where they met key policy makers, regulators, utility officers and implementers. They also visited various solar project sites in Madhya Pradesh for onsite learning including a solar rooftop plant at the

Board of Secondary Education Office Campus, Bhopal and the Atal Bihari Vajpayee Institute of Good Governance Campus, Bhopal as well as Shakti Pump Manufacturing Unit in Pithampur, Dhar. Moreover, there were various knowledge sessions by industry experts on solar power applications.

BANKERS TRAINING – A CAPACITY BUILDING INITIATIVE

Lack of subject matter expertise about the renewable sector has contributed to exaggerated risk perception. Banks and financial institutions have limited clarity about the financing process, cost-benefit analysis, project preparation, appraisals, contract finalisations, risk guarantee mechanisms among others. The ISA is working to bridge these gaps by conducting capacity building programmes and trainings for bankers in its member countries, through training sessions, seminars and workshops. Consequently, the initiative aims to enable bankers and finance professionals to review and assess the techno-commercial viability of setting up a solar PV plant.

Training design and implementation framework includes:

- ☑ Checking the site feasibility of solar PV power plant
- ☑ Assessing the technology feasibility of solar PV power plant
- ☑ Evaluating the financial viability of the solar PV plant and conducting necessary risk assessment
- ☑ Reviewing the existing financing instruments, identifying and understanding the credit appraisal mechanism and review the business models.

To successfully develop and facilitate the training sessions, ISA shall

- Identify and foster partnership with local institutes in member countries/regions
- Develop training mechanisms, lead and organise the trainings
- Identify local banking associations in member countries to mobilise bankers and trainers for the proposed courses.

The ISA has partnered with training institutes and experts such as National Institute of Solar Energy (India), Skill Council for Green Jobs, Indian Renewable Energy Development Agency and the State Bank of India to develop curriculum, best practices manuals, case studies for training according to global standards and specifications.

Progress and achievements

First batch (July 21-24, 2020): 42 bankers from member countries in Asia Pacific region namely Sri Lanka, Fiji and Tonga received training.

Second batch (August 10-14, 2020): 62 participants from seven ISA member countries from Africa Region - Gambia, Namibia, Somalia, Mozambique, Tanzania, Sudan and Nigeria participated.

Third batch (August 17-21, 2020): 51 participants from Benin, Comoros, Togo, Djibouti, Gabon and Senegal participated in the exclusive training in French language.

Fourth Batch is proposed to be conducted for ISA member countries of Latin America and Caribbean region in Spanish and English.

Till date 155 participants in three batches have undergone Bankers Training from 16 ISA member countries.

SKILL DEVELOPMENT OF TECHNICIANS

The ISA is planning to set up an expanding pool of national experts on solar energy in a multi-dimensional way, that is, through technology, economy, management, policies, international cooperation, etc. It plans to develop a global network of ISA Solar Scholars to create new channels of co-operation between member states.

In view of the above, the ISA has launched a Skill Development Initiative for ISA member countries. This is based on the Ministry of New and Renewable Energy, Government of India's skill development programme "Suryamitra". The aim of the initiative is to impart adequate training in market-relevant skills and to create opportunities for the development of talent within the ISA member countries and improve the overall scope and space for renewable energy sectors with a focus on solar.

This training programme covers all the basic requirements for a skilled technician to install, operate and maintain the solar power systems.

Course specifications

Criterion for selection: The programme will be outsourced to the National Institute of Solar Energy (NISE) for its management under the overall guidance of the ISA. The selection will be done by NISE subject to final approval by the ISA.

Duration of the course: The total duration of the course will be three months, spanning 600 hours. The training will be in English, French and Spanish.

Budget: The ISA will bear the cost of the programme.

Future plan

The ISA would like to train 5,000 solar mechanics by qualified technical people and in a virtual mode with the help of competent agencies that are qualified to impart training, assess the standards and extend proper certifications.



ISA plans to develop a global network of ISA Solar Scholars to create new channels of co-operation between member states.



ISA AWARDS

ISA awards are institutionalised to promote awareness about the ISA and to incentivise the advances to be made in the solar energy sector. The awards can be financed by ISA member countries or their supra or sub national entities.

Following awards have been institutionalised:

Kalpna Chawla Haryana Solar Award: Haryana sanctioned a corpus of Rs 100 million for instituting a solar award. This award recognises the contributions of scientists, engineers and technologists from ISA member countries and to further encourage their participation in the solar sector.

ISA-Karnataka Visvesvaraya Solar Award: Karnataka sanctioned a corpus of Rs 100 million for instituting the Visvesvaraya Solar Award for best floating solar project.

The ISA Diwakar Solar Award: This award was instituted with support from Hon'ble Minister of Railways, Mr. Piyush Goyal, Government of India, to recognise organisations, run for differently abled people, that have adopted solar energy applications or run on power derived from solar energy.

ISA-Madhya Pradesh Acharya Vinoba Bhave International Solar Pump Award: Madhya Pradesh sanctioned a corpus of Rs 100 million for instituting the solar pump award. The objective of the award is to promote outstanding work in the field of solar pumps.

Selection process

The applicants will be shortlisted and screened through a multi-layered and stringent selection process:

1. Each year, award applications will be invited from all member countries of the ISA
2. The pre-defined criteria for eligible entities, selection and the requisite documentary proofs required for the awards will be communicated by the ISA in advance.
3. Applications for these awards shall be submitted to respective NFPs or directly on the website.
4. The Screening Committee constituted by the ISA Secretariat in consultation with the state governments each year, will shortlist applications based on the pre-set criteria.
5. The shortlisted entries will be required to submit a detailed presentation to the International Awards Committee, post which a winning application will be chosen.
6. The final award would be presented by the Chief Minister of the state during the Host Country Day event, to be held during the 3rd Assembly of the ISA.

DEPLOYING RESOURCES STRATEGICALLY – FUND MOBILISATION

The ISA's fund flow status has been prepared to analyse financial sustainability of the ISA Secretariat in coming years. The historic fund flows and projected financial position of the ISA in coming years is highlighted below. As shown in the table below, if no new funds are received, the ISA will have a fund deficit by 2022 with a 10% year-on-year increase in expenditure.

Recognising the imminent need for resource mobilisation, the third meeting of the Standing Committee established the "Sub-Committee on Resource Mobilisation" to guide and assist the ISA Secretariat in mobilising USD 100 million to be utilised for the implementation of programmes and projects. The Standing Committee also mandated the Secretariat, under the guidance of the Sub-Committee, to urgently reach out to potential contributors to discuss Theory of Change and Project Proposals for securing financial pledges.

Particulars	2016	2017	2018	2019	2020	2021	2022	Total
I. Corpus Received:								
Corpus Fund	17.00	1.00	8.00	0.17	0.97	3.69	0.34	31.17
Interest on Corpus Fund	0.23	0.68	1.36	1.84	1.70	1.74	1.65	9.20
Less: Interest on corpus fund utilised for recurring expenditure	-	-	-	-	-	(2.18)	(5.37)	(7.55)
II. Award Fund								
Award Fund	-	-	-	0.74	0.71	-	-	1.45
Interest on Award Fund	-	-	-	0.01	0.17	0.08	0.09	0.34
III. Specific Fund								
Specific Fund	-	-	-	-	0.12	-	-	0.12
II. General Grants Received from MNRE:								
Opening Balance	-	2.18	4.04	4.51	5.47	5.47	0.18	
A. General Funds received	2.14	2.14	2.14	2.14	2.14	-	-	10.71
B. Interest on General Funds	0.07	0.14	0.17	0.33	0.32	0.15	-	1.18
C. Interest on Corpus Fund (utilised for recurring expenditure)	-	-	-	-	-	2.18	5.37	7.55
D. Expenditure / Payment **	0.04	0.41	1.84	1.51	2.46	7.63	7.52	21.42
Closing Balance	2.18	4.04	4.51	5.47	5.47	0.18	(1.98)	(1.98)

All values in USD Million
USD 1= INR70

STRENGTHENING OUR IMPACT THROUGH PARTNERSHIPS AND COLLABORATIONS

ISA'S COALITION FOR SUSTAINABLE CLIMATE ACTION

ISA's Coalition for Sustainable Climate Action (ISA-CSCA) is a consortium of public and private entities working in the direction of universal energy access and meeting climate targets, thus, helping governments meet the challenges as they lay the foundation for energy investments and climate action. ISA-CSCA's mission would be to build strategic partnerships between investors and policy makers to promote the role of private sector finance in developing clean energy projects in ISA member countries.

Key strategic priorities:

- Strengthening implementation of access to clean energy programmes, projects and activities
- Enhancing policy and technical support to member countries
- Facilitating technical and financial support for solar projects
- Ensuring financial stability of the ISA

Coalition for Sustainable Climate Action for Corporates

Partnering with corporates will help ISA drive solar energy transition. The associated corporates will:

- Provide expertise to identify climate change opportunities in member countries and leverage experience to influence public policy and decision making in these countries
- Be an ambassador and represent the ISA at global events, discussions and conferences
- Contribute Corpus Fund to support the ISA or its programmes and activities in member countries and drive solar transition
- Provide integrated support to implement programmes and activities at the ground level in ISA member countries and lead the revolution of climate change mitigation and adaptation
- Serve on international projects by offering time and expertise to make a lasting impact on achieving universal energy access as well as fighting against climate change

ISA corporate partners gaining worldwide recognition for leading climate action



STRENGTHENED PARTNERSHIP WITH UN AGENCIES, IOS, AND MDBS

In its role of facilitator, the ISA is focused on facilitating/funding projects and providing project implementation support. It has signed 48 strategic partnerships with many allied international organisations including IRENA.

Major partnerships

- The ISA has entered into a strategic partnership with GOGLA to advance the development and deployment of off-grid solar energy by undertaking joint actions and sharing expertise. GOGLA will provide consulting and advisory services and leverage its deep industry knowledge of the offgrid solar standalone market. It will also provide inputs for developing globally harmonised standards for offgrid solar products.
- The ISA has partnered with the African Development Bank to take forward its New Deal on Energy for Africa, which aims to achieve universal access to energy in Africa by 2025. The bank's transformative 'Desert to Power' initiative in Africa's Sahel and Sahara regions envisages 10 GW of solar power generation and providing clean energy to 90 million people. Together with the ISA, they would like to work on mobilisation of concessional financing
- The IRENA and ISA are collaborating on advancing solar deployment and projects by helping countries develop policies and regulations around solar energy and through the implementation of IRENA initiatives such as the Clean Energy Corridors and the SIDS Lighthouses. IRENA's project facilitation tools and platforms such as the Global Atlas for Renewable Energy, the Project Navigator, and the Sustainable Energy Marketplace will be made available to the ISA, in support of its action-oriented and project-focused work in countries.
- The ISA and the Asian Development Bank have joined hands for promoting solar energy in Asia and the Pacific, including solar-based mini-grids and transmission systems dedicated for integrating solar energy into the grids and any other future programmes launched by the ISA.
- The Asian Infrastructure Investment Bank and the ISA have joined hands for solar energy promotion in prospective ISA member countries where the bank operates.
- In 2018, the Green Climate Fund (GCF) signed a joint declaration with the ISA to strengthen collaboration for renewable energy and to promote solar energy solutions. Since 2016, the GCF Board has approved 13 renewable energy projects in 45 countries where GCF is committing USD 1.3 billion to realize USD 5.5 billion of investments.
- The ISA has facilitated financing from the Export Import Bank of India, Asian Development Bank and AFD.

ISA'S KEY PARTNER ORGANISATIONS

African Development Bank, Abidjan, Côte d'Ivoire

Asian Development Bank, Mandaluyong, Philippines

Asian Infrastructure Investment Bank, Beijing, China

CAF- Development Bank of Latin America, Caracas, Venezuela

Climate Parliament

Commonwealth Secretariat, London, United Kingdom

Department for International Development, London, United Kingdom

East African Centre of Excellence for Renewable Energy and Efficiency, Kampala, Uganda

ECOWAS Centre for Renewable Energy and Energy Efficiency, Praia, Cape Verde

European Bank for Reconstruction and Development, London, United Kingdom

European Investment Bank, Kirchberg, Luxembourg

European Union, Brussels, Belgium

Global Green Growth Institute, Seoul, South Korea

Global Off-Grid Lighting Association, Utrecht, The Netherlands

Global Solar Council

Green Climate Fund, Incheon, South Korea

Indian Ocean Rim Association, Ebene, Mauritius

International Energy Agency, Paris, France

International Renewable Energy Agency, Abu Dhabi, United Arab Emirates

R20 Regions of Climate Action, Geneva, Switzerland

Schneider Electric Foundation, Rueil-Malmaison, France

Sustainable Energy for All, Vienna, Austria

The New Development Bank, Shanghai, China

The World Bank, Washington, D.C., United States

United Nations Convention to Combat Desertification, Bonn, Germany

United Nations Development Programme, New York, United States

United Nations Economic and Social Commission for Asia and the Pacific, Bangkok, Thailand

United Nations Environment Programme, Nairobi, Kenya

United Nations Industrial Development Organization, Vienna, Austria

World Association of Investment Promotion Agencies, Istanbul, Turkey and Geneva, Switzerland

World Resource Institute, Washington, D.C., United States

WORKING TOWARDS A SOLAR FUTURE

The realisation of ISA's objective of mobilising more than USD 1,000 billion of solar investments in ISA member countries is a critical step in making progress on commitments made under the Paris Agreement. ISA's proposed work plan for the calendar years 2020 and 2021 aims to steer member countries towards that path and identifies the following key strategic priorities:



Strengthening the implementation of ISA's programmes, projects and activities

The proposed activities under ISA's programmes will be implemented with strong participation from member countries and their key stakeholders at country, regional and global levels.



Enhancing policy and technical support to member countries

The ISA will engage experts from member countries as part of its expert missions. It will scale-up its cooperation and consultation initiatives to strengthen their implementation and plan for new initiatives.



Facilitating technical and financial support for solar projects

The ISA Secretariat will focus on the mobilisation of concessional finance and private funds along with project preparation and appraisal. In collaboration with MDBs, DFIs, and private sector players, it will finalise a roadmap for mobilising more than USD 1,000 billion for solar investments by 2030 in ISA member countries. It will also lead a technically-focused comprehensive capacity building programme.



Increasing the membership and strengthening the governance of the ISA

Efforts are being made to obtain Permanent Observer Status for the ISA at the United Nations General Assembly and to establish institutional linkages with the United Nations. The ISA Secretariat will enhance the support provided to the Committees to support the effective governance of the organisation. It is also supporting a series of global task forces to engage with various stakeholders and promote innovation, risk mitigation and financing.



Ensuring financial sustainability of the ISA

The ISA Secretariat will prepare a comprehensive fundraising strategy and procure the services of global experts to support its resource mobilisation efforts. It will also seek the help of a leading global strategy advisory firm for articulating ISA's roadmap for mobilising USD 1,000 billion by 2030 and its organisational set-up.



Strengthening the Secretariat organisation and capacity

The ISA Secretariat will be procuring the services of a leading global renewable energy consulting firm to strengthen the capabilities of the Secretariat and enhance the implementation of ISA's programmes. It will also complete its recruitment of professional and general staff.



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Designed and conceptualised by **RenewableWatch**