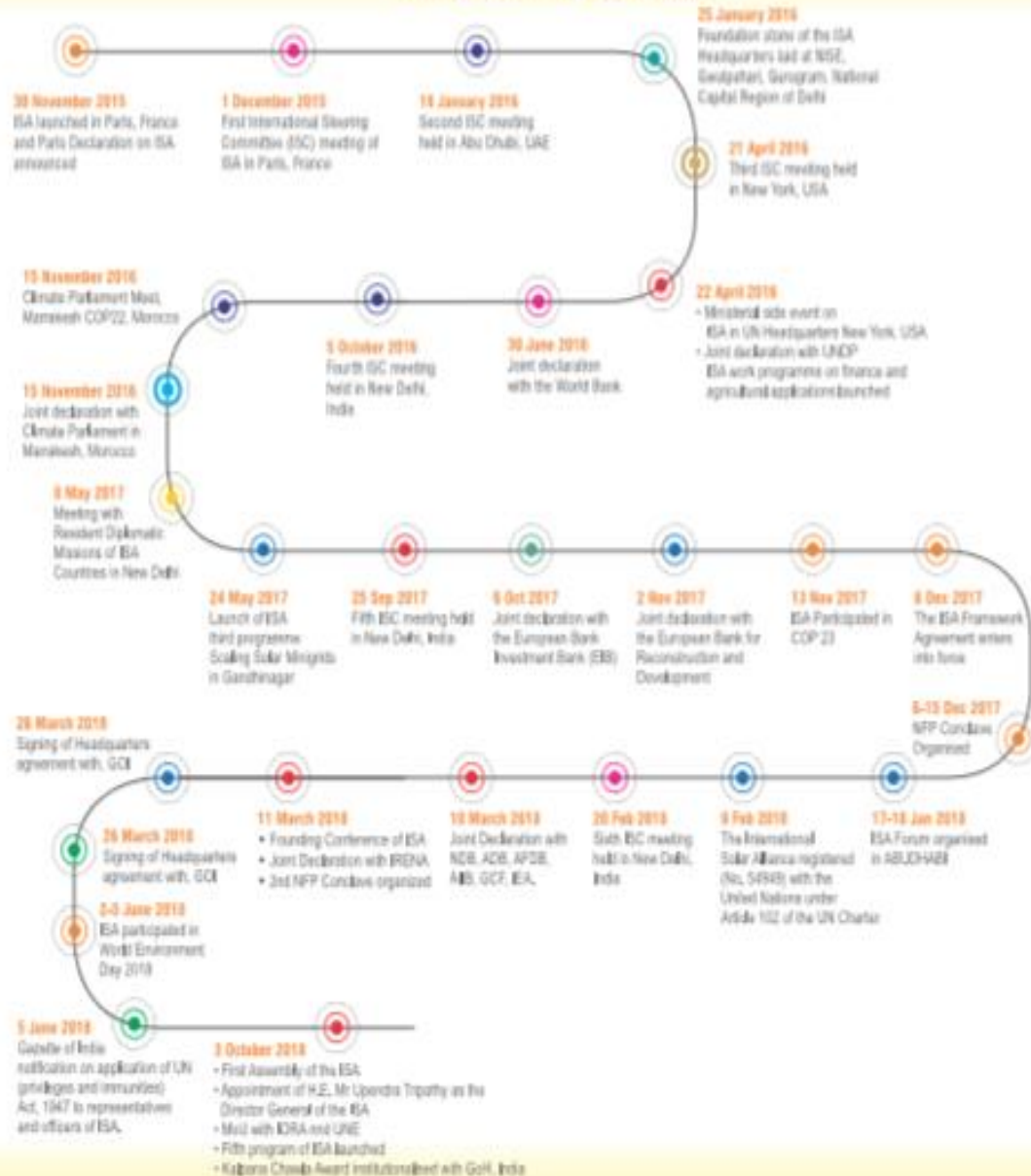


International Solar Alliance Update

ISA's Journey so far...



121 Prospective member countries
71 Signatory countries
48 countries ratified (as on 23rd Jan 2019)

Names of the countries that have signed the Framework Agreement

- | | | |
|---|--------------------------------------|--|
| 1. Commonwealth of Australia | 25. Republic of Kiribati | 49. Republic of Burundi |
| 2. Peoples Republic of Bangladesh | 26. Republic of Liberia | 50. Republic of Guyana |
| 3. Republic of Benin | 27. Republic of Madagascar | 51. Democratic Socialist Republic of Sri Lanka |
| 4. Federal Republic of Brazil | 28. Republic of Malawi | 52. Republic of Suriname |
| 5. Burkina Faso | 29. Republic of Mali | 53. Republic of Uganda |
| 6. Kingdom of Cambodia | 30. Republic of Mauritius | 54. Republic of Cape Verde |
| 7. Republic of China | 31. Republic of Nauru | 55. Republic of The Gambia |
| 8. Republic of Costa Rica | 32. Republic of Niger | 56. Republic of Mozambique |
| 9. Democratic Republic of Congo | 33. Federal Republic of Nigeria | 57. Democratic Republic of Sao Tome and Principe |
| 10. Union of Comoros | 34. Republic of Peru | 58. Republic of Yemen |
| 11. Republic of Cote d'Ivoire | 35. Republic of Rwanda | 59. Independent State of Papua New Guinea |
| 12. Republic of Cuba | 36. Republic of Senegal | 60. People's Democratic Republic of Algeria |
| 13. Republic of Djibouti | 37. Republic of Seychelles | 61. Commonwealth of Dominica |
| 14. Dominican Republic | 38. Federal Republic of Somalia | 62. Arab Republic of Egypt |
| 15. Federal Democratic Republic of Ethiopia | 39. Republic of South Sudan | 63. Republic of Grenada |
| 16. Republic of Equatorial Guinea | 40. Republic of Sudan | 64. United Kingdom |
| 17. Republic of Fiji | 41. United Republic of Tanzania | 65. The Netherlands |
| 18. France | 42. Kingdom of Tonga | 66. Republic of Namibia |
| 19. Gabonese Republic | 43. Togolese Republic | 67. Republic of El Salvador |
| 20. Republic of Ghana | 44. Tuvalu | 68. Republic of Myanmar |
| 21. Republic of Guinea | 45. United Arab Emirates | 69. Republic of Zimbabwe |
| 22. Republic of Guinea-Bissau | 46. Republic of Vanuatu | 70. Republic of Zambia |
| 23. Republic of India | 47. Bolivarian Republic of Venezuela | 71. Republic of Cameroon |
| 24. Japan | 48. Republic of Chad | |

Names of the Countries that have also ratified the Framework Agreement

- | | | |
|---|---------------------------------|--------------------------|
| 1. Commonwealth of Australia | 17. Republic of Niger | 33. Burkina Faso |
| 2. Democratic Socialist Republic of Sri Lanka | 18. Republic of Peru | 34. Republic of Grenada |
| 3. Peoples Republic of Bangladesh | 19. Republic of Seychelles | 35. Republic of Suriname |
| 4. Union of Comoros | 20. Federal Republic of Somalia | 36. Republic of Namibia |
| 5. Republic of Cuba | 21. Republic of South Sudan | 37. Republic of Chad |
| 6. Republic of Fiji | 22. Tuvalu | 38. Republic of Benin |
| 7. France | 23. Togolese Republic | 39. Republic of Djibouti |
| 8. Republic of Ghana | 24. Republic of Uganda | 40. Republic of Senegal |
| 9. Republic of Guinea | 25. Republic of Guyana | 41. Kingdom of Tonga |
| 10. Gabonese Republic | 26. Republic of Rwanda | 42. Republic of Vanuatu |
| 11. Republic of India | 27. Republic of Cote d'Ivoire | 43. Republic of Myanmar |
| 12. Republic of Kiribati | 28. Commonwealth of Dominica | 44. Republic of Malawi |

The International Solar Alliance - Overview

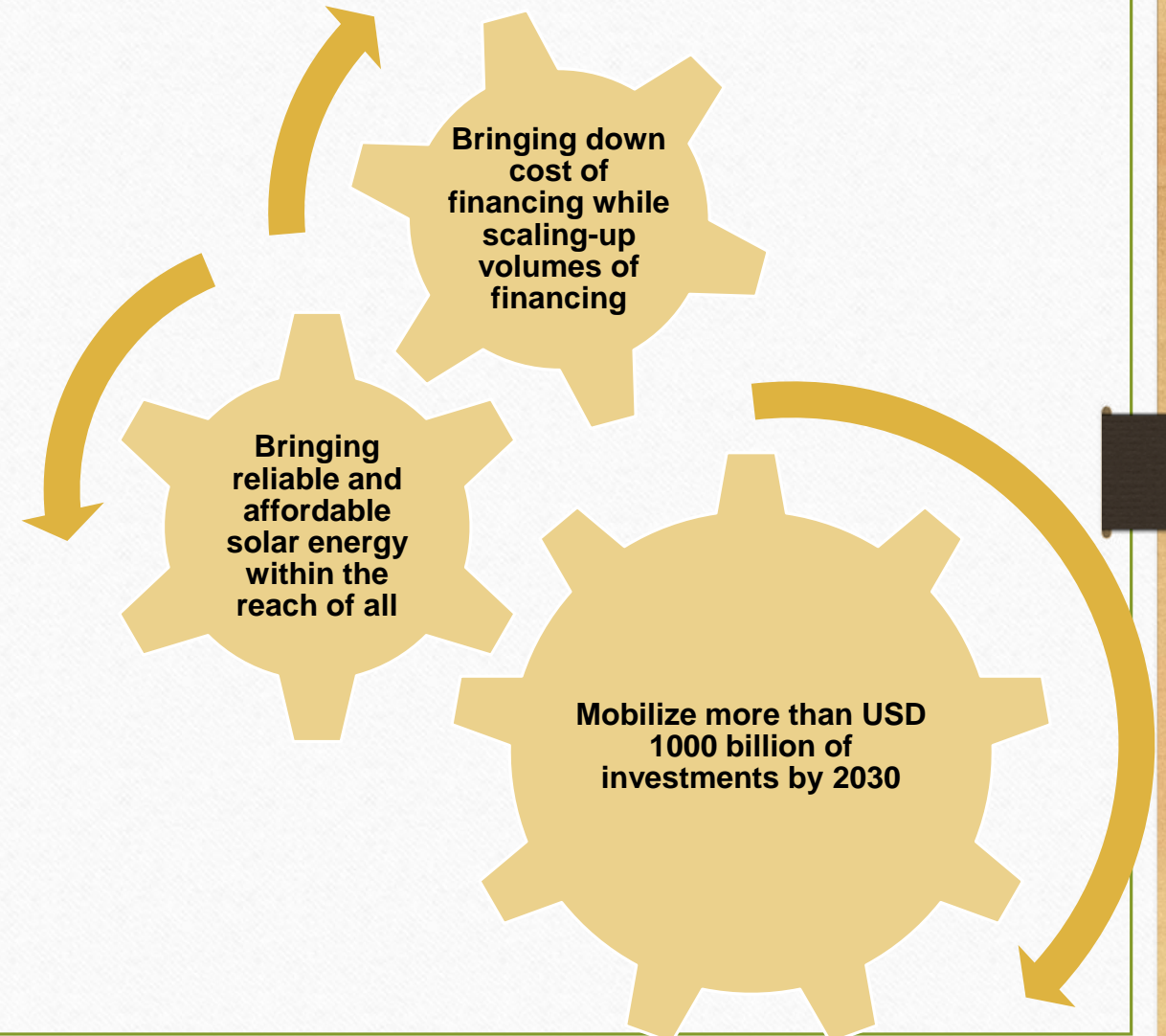
Programs

- ❑ Scaling Solar applications for Agricultural use
- ❑ Affordable finance at scale
- ❑ Scaling Solar Mini-grids
- ❑ Scaling Solar Roof top
- ❑ Scaling Solar E-Mobility & Storage

Unique features

- ❑ Programs are action-oriented and Member-driven
- ❑ Acts as a catalyst and facilitator for large scale deployment of affordable solar energy applications
- ❑ Not a Bank, but will help mobilization of more than US \$ 1000 billion through various financial instruments of multilateral banks
- ❑ Aggregation of demand and price discovery

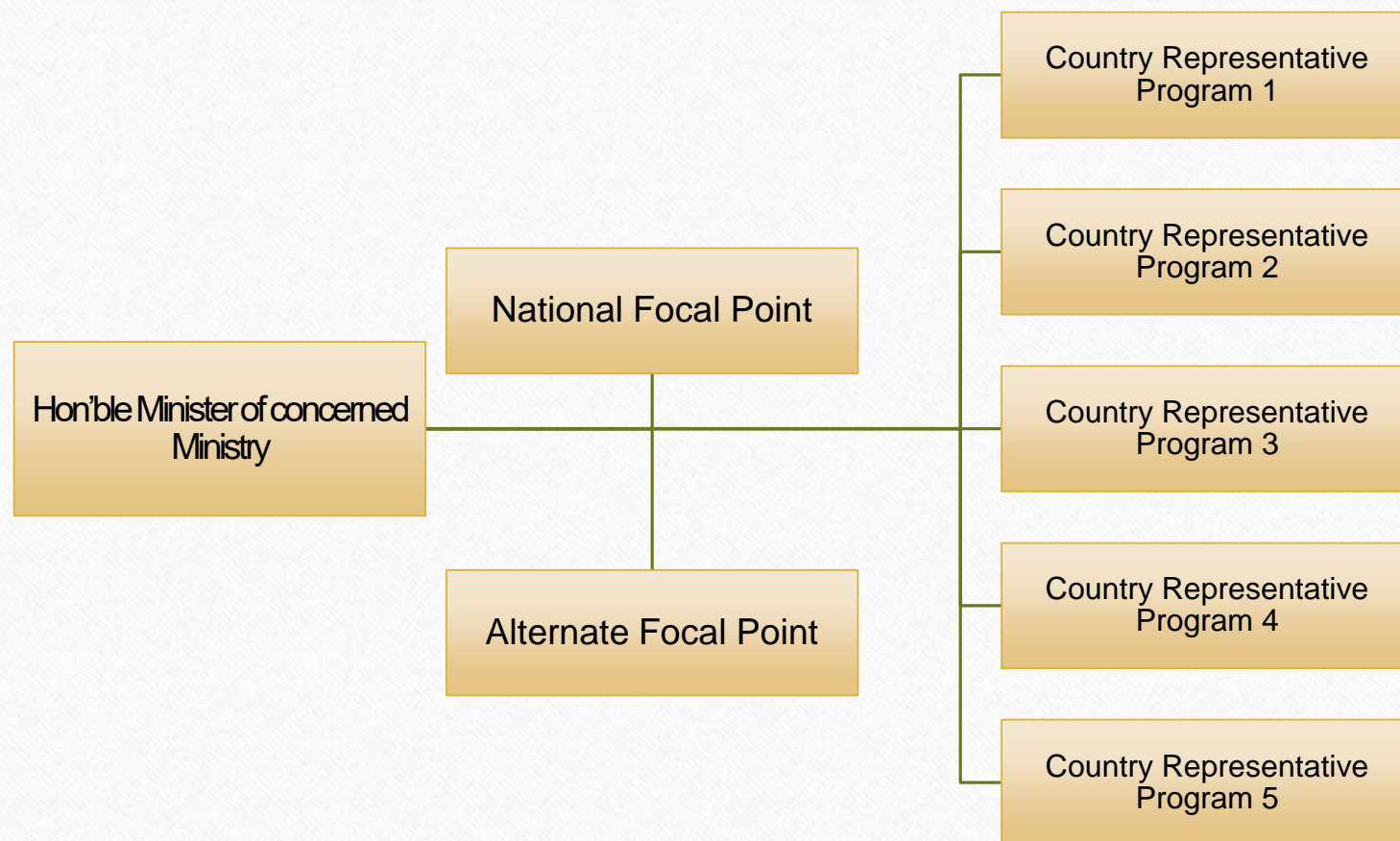
Three goals



ISA Program	Participating Countries (total)	Countries that have Ratified Framework Agreement	Countries that have Signed the Framework Agreement
Scaling Solar Applications For Agricultural Use	28	Bangladesh; Benin; Djibouti; Fiji; France; Gabon; Ghana; Guyana; India; Madagascar; Malawi; Mali; Mauritius; Niger; Rwanda; Senegal; Seychelles; Somalia; Sudan; Togolese; Tuvalu; Uganda; Kiribati; Tonga; Vanuatu. (25)	Ethiopia; Guinea-Bissau; Nigeria. (3)
Affordable Finance at Scale	31	Bangladesh; Benin; Burkina-Faso; Chad; France; Ghana; Guyana; India; Madagascar; Malawi; Mali; Namibia; Nauru; Niger; Senegal; Seychelles; Somalia; Sri Lanka; Togolese; Tuvalu; Uganda; Kiribati; Tonga; Vanuatu. (24)	D R Congo; Ethiopia; Guinea-Bissau; Liberia; Nigeria; Burundi; Yemen. (7)
Scaling Solar Mini-grids	28	Bangladesh; Benin; Burkina-Faso; Chad; Djibouti; Ghana; Guinea; Guyana; India; Madagascar; Malawi; Mali; Nauru; Niger; Senegal; Somalia; Sudan; Togolese; Tuvalu; Kiribati; Tonga; Vanuatu. (22)	D R Congo; Guinea-Bissau; Liberia; Nigeria; Burundi; Tanzania. (6)
Scaling Solar Rooftop	18	Benin; Djibouti; Ghana; Guyana; Madagascar; Malawi; Mali; Nauru; Niger; Senegal; Seychelles; Togolese; Kiribati; Tonga; Vanuatu. (15)	Guinea-Bissau; Liberia; Burundi. (3)
Scaling Solar E-Mobility and Storage	13	Djibouti; Guyana; Mali; Nauru; Senegal; Seychelles; Togolese; Tuvalu; Kiribati; Tonga; Vanuatu. (11)	Guinea-Bissau; Burundi. (2)

In-country Task Force for Program Implementation

To implement the ISA Programs, it is proposed to have the following structure of a Task Force at Country level



- **Program 1**
Scaling Solar Application for Agricultural Use
- **Program 2**
Affordable Finance at Scale
- **Program 3**
Scaling Solar Mini Grids
- **Program 4**
Scaling Rooftop Solar
- **Program 5**
Solar E-Mobility and Storage

Expression of interest (Eol) for Solar Water Pumping Systems



Draft Eol - Circulated to NFPs & Excellency's in 14th SunMeet (25th July, 2018)



Uploaded onto ISA Website on 26th July, 2018 for receiving offer on SWISS Challenge



Demand received from NFPs of 13 Countries



Last date to receive offer against Eol on 24th August, 2018



Letter of Intent has been issued on 11th September, 2018 to M/S EESL, India

- ☐ Eol issued to select organization, which can process International Competitive Bidding and provide services as Project Management Consultancy on behalf of ISA

Components involved in Price Exploratory Global Tender for Solar Water Pumping Systems:

- ☐ Five years of warranty on operation & maintenance by developer
- ☐ Mandate on capacity building by training local manpower/farmers

Scaling Solar Application for Agricultural Use

Demand Aggregation for Price Exploratory Global Tender

S.No.	ISA member countries	# of Pumps
1	India	300000*
2	Bangladesh	50000*
3	Benin	50000
4	Sudan	50000
5	Uganda	30000
6	Democratic Republic of Congo	80000
7	Mali	15000
8	Niger	15000
9	Tuvalu	10000
10	South Sudan	6800
11	Togo	5000
12	Senegal	4000
13	Sri Lanka	2000
14	Yemen	1500
15	Somalia	500
16	Nauru	400
17	Tonga	258
18	Guyana	111
19	Djibouti	100
20	Cabo Verde	100
21	Mauritius	27
22	Fiji	27
23	Zambia	6
TOTAL		270829

* Demand withdrawn

(As on 31st Dec 2018)

Scaling Solar Mini Grids

- ☐ Several rounds of video conferences between National Focal Points organised.
- ☐ Questionnaires shall be circulated to all participating and ISA signatory countries.
- ☐ Call for Expression of Interest (CEI) for Solar Mini Grids has been issued to all NFPs-five projects concepts to be submitted by countries.
- ☐ The basic objective of aggregating demand from ISA Member Countries is to reduce the cost of installation, operation and maintenance.
- ☐ Industry has given expression of interest for mini-grids

Scaling Rooftop Solar

- ☐ Member countries have been requested to submit at least five project concepts for demand aggregation by ISA on as Power Purchase Agreement (PPA) basis.
- ☐ Assess rooftop potential, harmonize demand, pool resources and promote rapid deployment of Solar Rooftop at scale in ISA member countries.
- ☐ Model PPAS for Rooftop RESCO projects is in advanced stage of finalization
- ☐ Rooftop Scheme of ISA under finalisation as a Model Guide to be circulated to Member Countries.
- ☐ Twin-City MoU between Chandigarh, India and Accra, Ghana for scaling rooftop solar and developing Solar City Program.
- ☐ Master Trainers Program

Program # 3 & 4 Scaling Solar Mini Grids and Solar Rooftop

Activities Proposed for Year 2019-20



Scaling Solar Mini-Grids Demand Aggregation

S No	Member Country	Solar Mini-Grids
1	Democratic Republic of Congo	10.4 MW (104 Mini Grids)
2	Cuba	0.0094 MW (5 Projects)
3	Guyana	1.634 MW (15 Projects)
4	Malawi	2.8 MW (13 locations)
5	Sri Lanka	3.73 MW (36 Projects)
6	Sudan	46.042 MW (44 projects)
7	Tonga	1.008 MW (11 Projects)
8	Guinea-Bissau (Prospective member country)	5 MW (5 projects)
9	Zambia (Prospective Member Countries)	2.5 MW (3 Projects)

Summary	Parameter	Aggregation capacity
	Solar Mini-grids	73.1234 MW

Scaling Rooftop Solar Demand Aggregation

S No	Member Country	Rooftop Projects		
		Government buildings	Industrial complexes	Commercial complexes
1	Cape Verde	1.39 MW (94 projects)	1.15 MW (29 projects)	2 MW (100 projects)
2	Democratic Republic of Congo	253.2 MW (2532 Rooftops)	506.4 MW (2532 Rooftops)	253.2 MW (2532 Rooftops)
3	Cuba	0.004 MW (3 projects)	0.0068 MW (5 Projects)	-
4	Guinea	1 MW (9 Projects)	-	-
5	Malawi	2.65 MW (85 projects)	-	-
6	Nauru	1.2 MW (5 Projects)	-	1 MW (5 Projects)
7	Sudan	4.365 MW (16 projects)	-	-
8	Tonga	0.5 MW (2 projects)	0.3 MW (1 projects)	0.2 MW (3 projects)
9	Tuvalu	5 MW	-	-
10	Guinea-Bissau (Prospective member country)	4.5 MW (4 projects)	1.5 MW (3 projects)	0.5 MW (2 projects)
11	Zambia (Prospective member country)	1.5 MW	-	-

Summary	Parameter	Aggregation capacity
	Solar Rooftop systems (Govt. Buildings)	275.309 MW
	Solar Rooftop systems (Industrial complexes)	509.3568 MW
	Solar Rooftop systems (Commercial complexes)	256.9 MW

Programs and Initiatives

☐ **NFP Conclaves**

2 till now (in Dec 2017 & Mar 2018), held at ISA Headquarters for 33 member countries

☐ **Roadmap**

National Solar Roadmaps prepared during NFP Conclaves

☐ **ECREE MoU**

Established an MoU with ECREE reach out more member countries

☐ **ITEC master Trainers**

Supported by Ministry of External Affairs, Government of India

☐ **Ghana- assessment of 15 government buildings**

Assessment of government buildings already done with expert groups

☐ **Iquitos, Peru Proposal**

Proposal to replace 50 MW load presently run on diesel with solar up to the year 2030. A support group was formed to assist Iquitos

Issues faced with Rooftop Program

Important issues for an ISA Member Country to evaluate solar rooftop system

- ☐ Existence of electricity regulatory commission (Yes or No)
- ☐ Solar Policy/Solar roadmap/NDCs
- ☐ Net metering Policy
- ☐ Availability of Net meters & manufacturers
- ☐ Implementing agencies in provinces/states
- ☐ Coordination of SNAs with DISCOMs
- ☐ Standards that a member country is following (IEC or any other)
- ☐ Availability of testing facilities to check the quality of solar products
- ☐ Availability of trained manpower related to solar energy
- ☐ Availability of manufacturers of modules, inverters, cables, structures
- ☐ Availability of training institutes for capacity building
- ☐ Any policy/notification issued for mandatory installation of solar rooftop on
- ☐ certain categories of buildings. (Haryana, a state from India took the lead)
- ☐ Assessment study carried out to access the potential to install the solar rooftop
- ☐ Any financing arrangements for MSME or other categories available. (SIDBI is available from India)
- ☐ Any industry association taking a lead in installing solar rooftop
- ☐ Steps for awareness campaigns (video/radio jingles/print media/school children/RWA's /industry association/NGOs)
- ☐ Role of media

❑ ITEC program in Solar Energy for Master Trainers from ISA Member Countries

- A training course of 21 days for Engineers/Technicians working in Solar Energy area already started (5 from each member country) as Master Trainer. The training being conducted at National Institute of Solar Energy (India) funded by Ministry of External Affairs, Govt.
- After training, a Master Trainer can go to respective country and train others to build up network of trained manpower within the country

❑ ISA Solar Fellowship for Midcareer Professionals

- 20 professionals working in the field of Solar Energy technology will be selected to pursue 2 year Master's Program in the field of solar technology, management and economics at one premier institute in India
- The professionals will go back and shall further contribute to enhancement of solar energy expertise & policy formulation in their home countries
- The program is designed to meet requirement of policy makers, planners, administrators and managers at government, public and private who have public commitment, demonstrated leadership potential to their own country's development

❑ E- Learning Platform

- Developed E-learning Platform with Indira Gandhi National Open University (IGNOU), New Delhi, India
- The course modules are on installation, O&M of solar energy equipment and farmer awareness under ISA's first programme Scaling Solar Applications for Agricultural Use.

❑ ISA Solar Award

- Government of Haryana, a province of India has sanctioned an amount INR 10 crore for instituting award to researchers working in the solar energy specialization.

- ❑ A **Joint Declaration** between the World Bank and the ISA was signed on June 30, 2016, for the promotion of solar energy globally.
- ❑ WB has been providing the following **support** to the ISA:
 - Supporting solar energy development and deployment through technical assistance and knowledge transfer; in-kind support through ESMAP (funds earmarked - USD .5 million)
 - A senior WB staff has been seconded to the ISA secretariat
- ❑ Recently **WB's Lighthouse Initiative**, run by India CMU, agreed on a partnership with ISA for implementing the following activities:
 - Documenting, curating and disseminating solar energy investments and policy good practices case studies, process documents etc., from across the Indian states and to ISA member countries:
 - Sharing knowledge and experience based on successful models of rooftop solar market development already emerging in India.
 - Supporting solar technology and knowledge transfer that is adaptable to local conditions in ISA member countries
 - Organize joint workshop/s, knowledge exchange/s, and study tour/s for policy makers from India and ISA member countries.

Implementation support - Next Steps

- ☐ Facilitate financing from MDBs, DFI and private sector for project implementation
- ☐ Pre-feasibility study
- ☐ Feasibility study
- ☐ International Competitive Bidding
- ☐ Detailed Project Report (DPR) by companies winning bid
- ☐ Tendering - Country wise



Discussion
