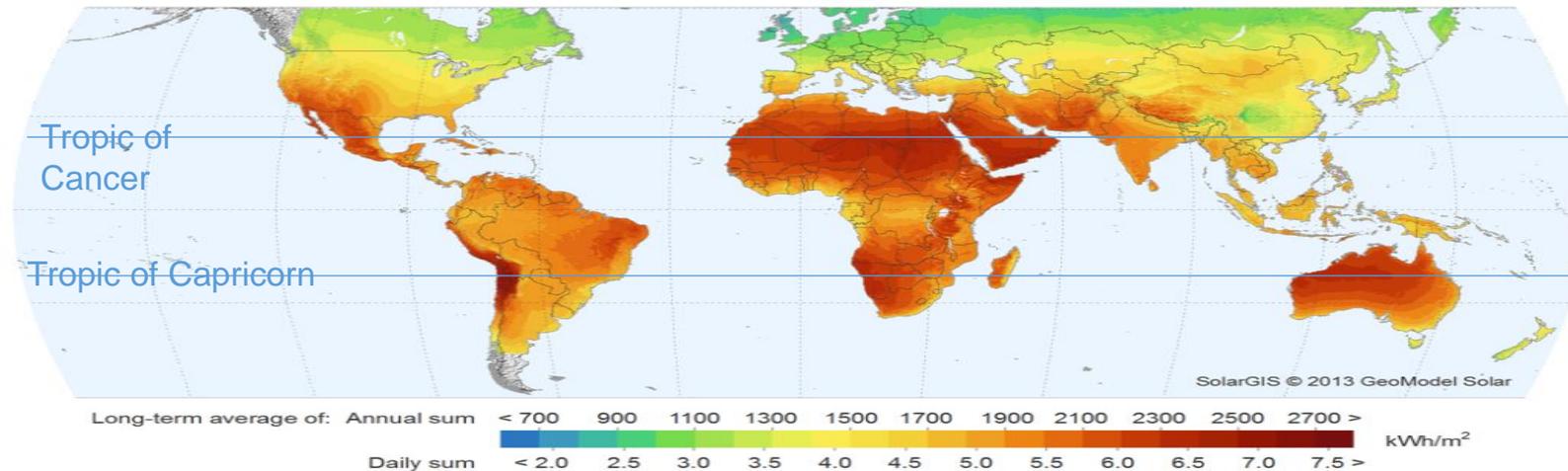


Presentation by H.E. Mr. Upendra Tripathy

Former Secretary to Government of India

&

Interim Director General, International Solar Alliance (ISA)



121 Prospective member countries
31 Signatory countries
5 countries ratified
(India, France, Nauru, Mauritius, and Fiji)

1861, Paris

*French Scientist Augustin Mouchot
Recieved Patents for
the Marmite Solaire*

*(A burning mirror that focused on
a heat trapping glass jar, that led him to
invent the solar steam engine 5 years later)*



Finance for Non-Financial Managers



It's highly likely that, as a leader at any level, you're going to have to analyze figures and measure financial performance. Although specialist financial managers may provide the data, it is non-financial managers who have to interpret this data and make use of it to manage operations. Hence, as non-financial managers our job is to know which measures of financial performance tend to be better than others and learn how to relate one, two or more individual measures to gain a clearer view. This typically entails making sure that we have carefully defined our terms to get "the lie of the land" by talking about what financial performance is and what it means before we then look at the major financial statements and how they relate to each other.

Affordable Finance at Scale Programme

ISA has invited ADB, IFC, NDB, AIIB, AfDB, Latin American Development Bank, EIB, GCF etc. to strive for:

- a) A global mechanism to reduce the cost of hedging and to create innovative financial mechanism (credit risk guarantee fund, first loss facility, security payment mechanism, etc.) ;
- b) Raising loans and green bonds in local currency for solar projects and
- c) Earmark at least 15 % of credit for solar sector and give a five year credit roadmap;

Measures for accessing “Affordable Finance at Scale”

- Standardization of transaction documents
 - Power Purchase Agreements (PPA)
 - Request for Proposal (RfP)
 - O&M Contract documents
 - Trustee Agreements
 - Trust & Retention Account (TRA)
- Conducive Policy Regime
 - Long term visible policies
 - Regulatory support
- Risk Mitigation Mechanisms
 - Political Risk
 - Hedging Risk
 - Technological risks
 - Financial risks
 - Project implementation risks
 - Power off-take risks
 - Quality issues
 - Performance & efficiency risks
- Capabilities of Banks and FIs to raise resources to the tune of US\$ 1000 Bn by 2030.

Possible Solutions for raising affordable finance

- To raise resources at scale, there is a need:
 - To address power off-take risks
 - To address default risks in case of off-grid projects
 - To tap low cost of funds through exploring bond markets, pension / provident funds etc
 - To reduce cost of funds through long term credit facilities (buyer's credit)
- Innovative financing products / models that may be replicated by FIs for raising & reducing cost of funds, in ISA member countries.
 - A. "First Loss Facility" for Access to Energy Projects
 - B. "Credit Enhancement Scheme", for enhancing credit rating of project Bonds
 - C. Letter of Comfort for opening of Letter of Credit
 - D. Partial "Payment Security Mechanism" for timely payments
- To encourage ISA members to support each other and create newer instruments.

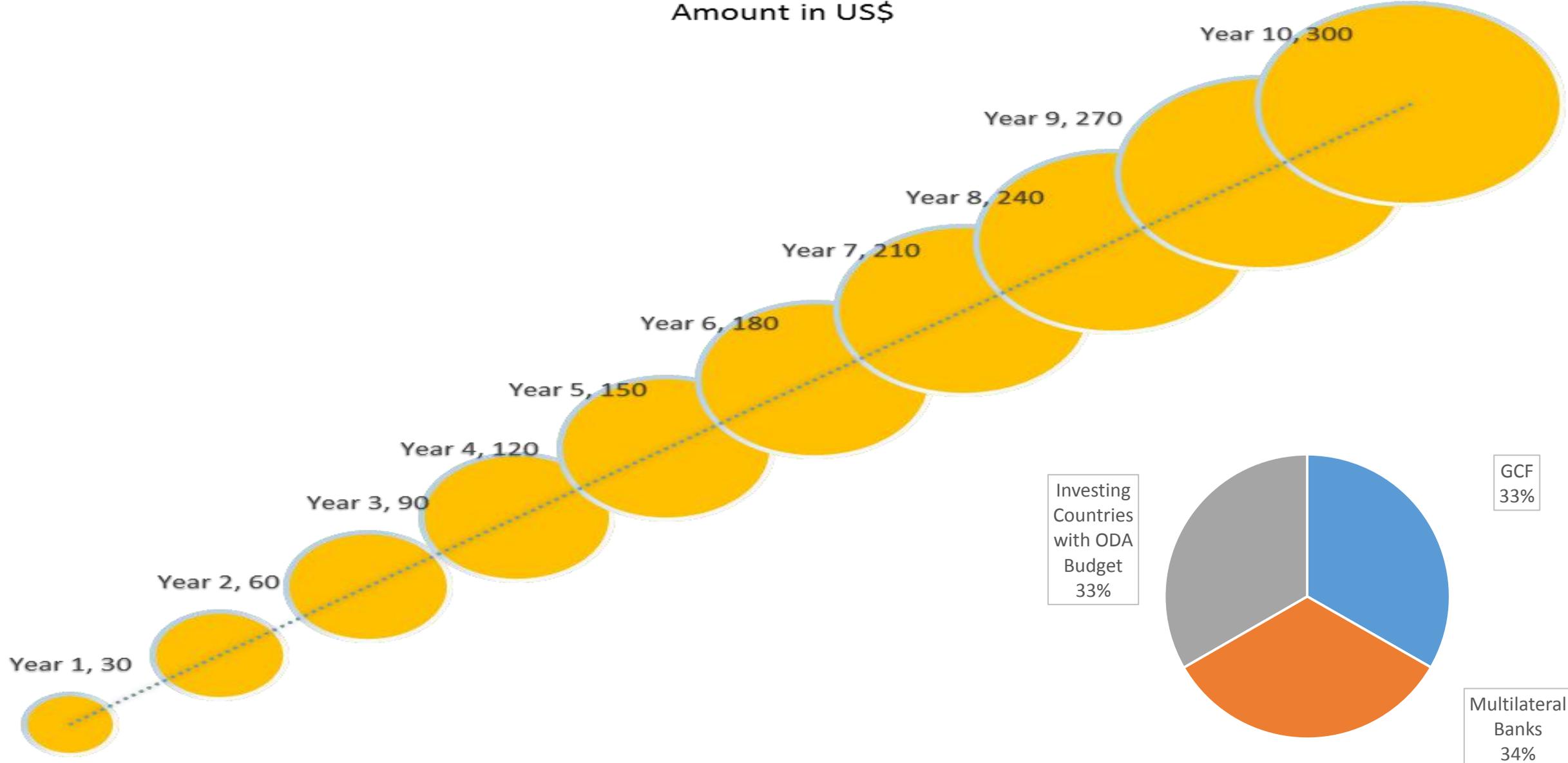
Solar Finance - Where is the money?



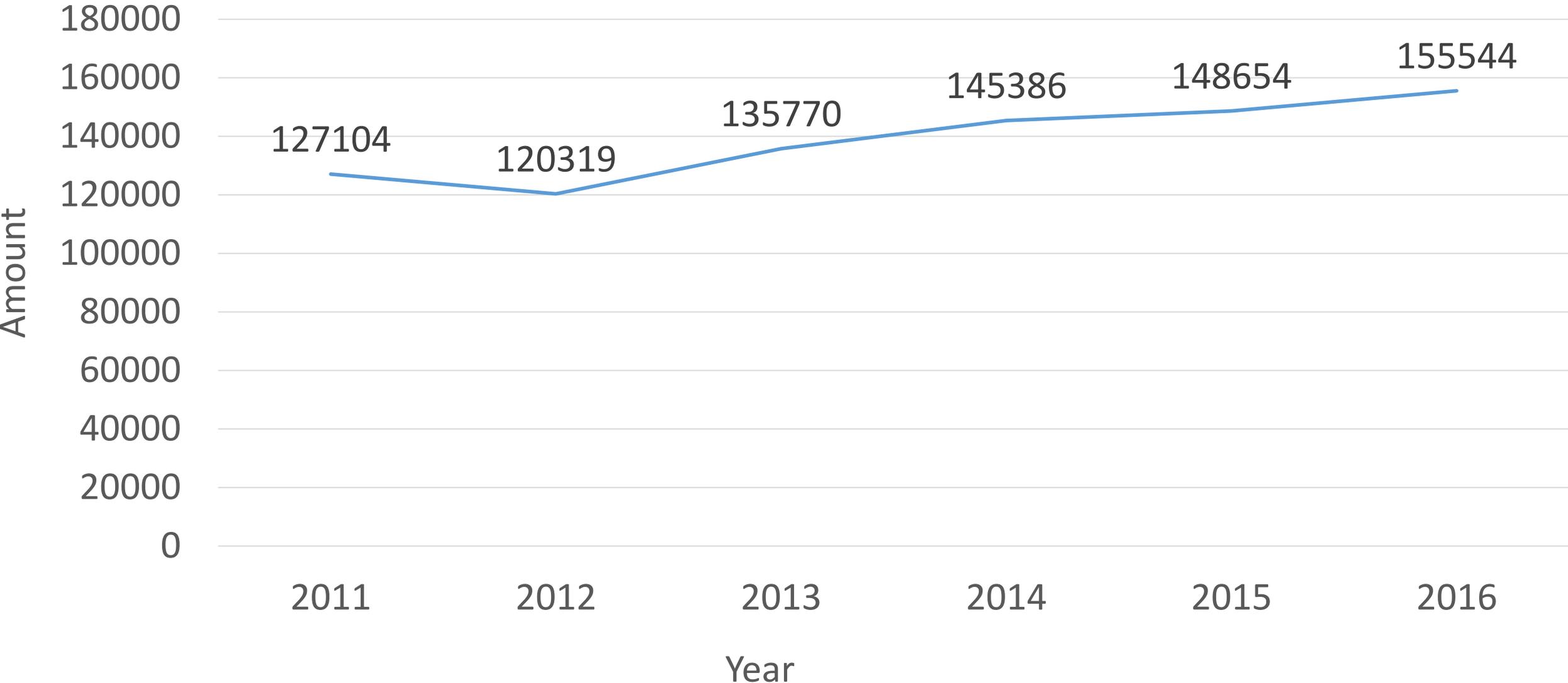
- **USD 60.8 Trillion** : Total Asset Under Management (AUM) of top 400 global funds (*Investments & Pensions Europe; as on December 31, 2014*)
 - *USD 15.0 Trillion with top 8 global funds*
- **USD 3.4 Trillion** : divestments/commitment to divest of corporations & institutions from fossil fuel investments
- As per OECD estimates:
 - **USD 0.96 Trillion** - new contribution into global pension funds annually
 - **USD 1.84 Trillion** - global premiums generated from annuity and life insurances annually
- **USD 149.5 Billion** – Global solar investments in 2014 (*REN21*); >55% of total RE investments
- **USD 100 Billion** – Green Bonds issuance till date (*USD 41.8 Bn in 2015*)

Proposed Global Risk Mitigation Fund

Amount in US\$

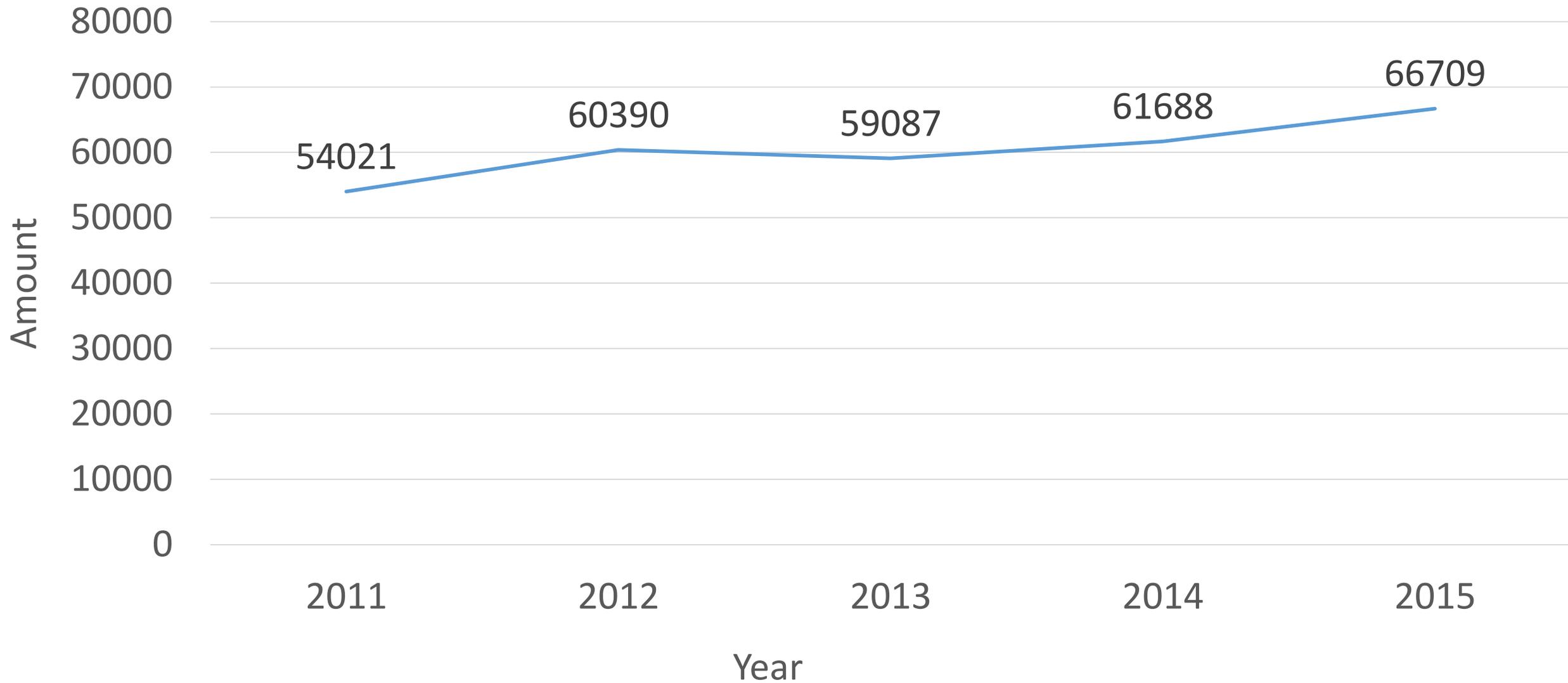


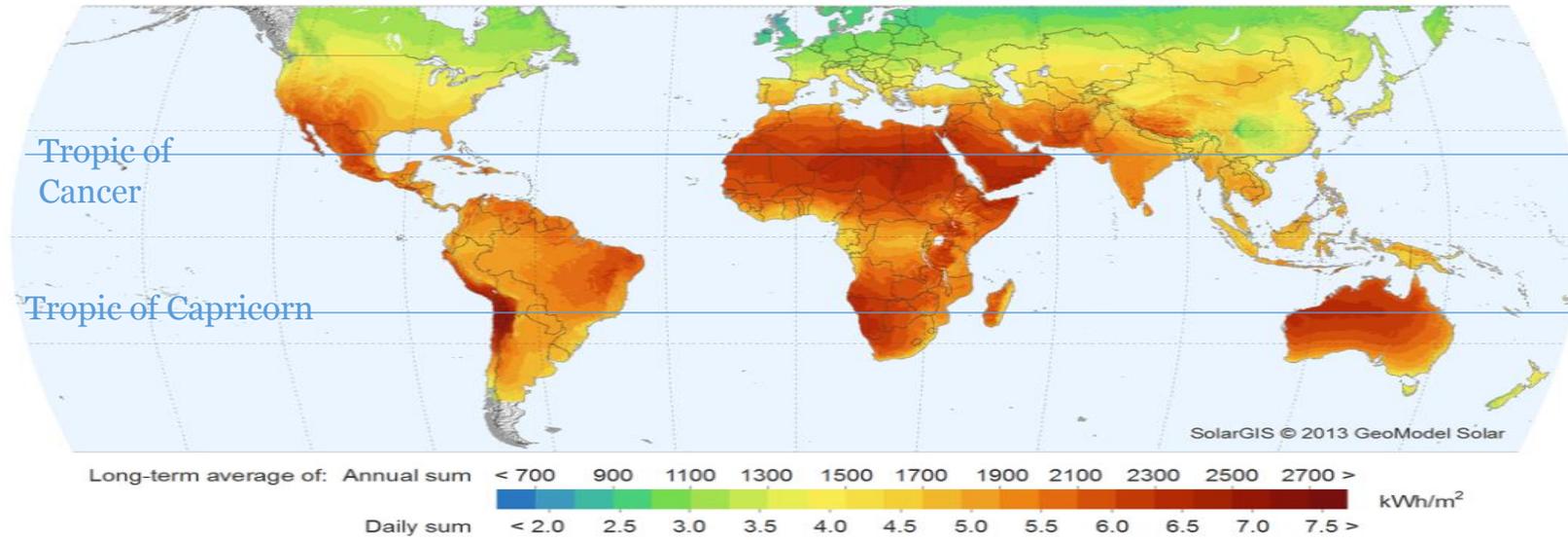
Total Official Development Assistance (ODA) by countries in US \$ Million



Source: OECD

Total Concessional and Non-concessional Flows by Multilateral Organisations in US \$ Million





Thank You

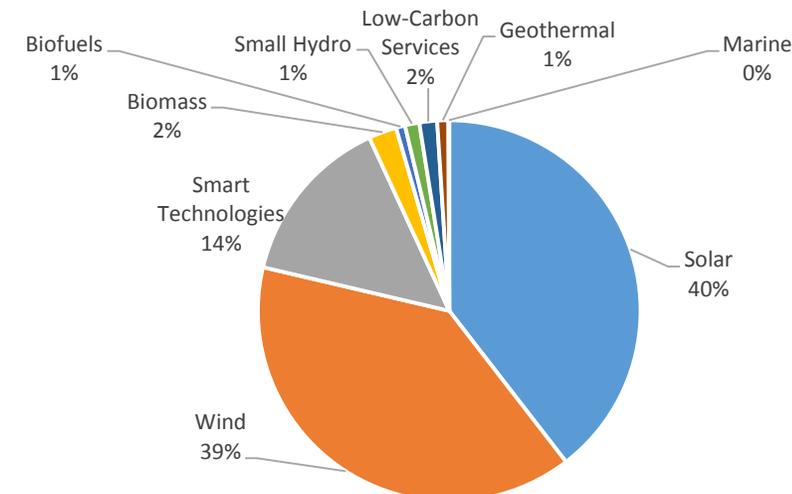
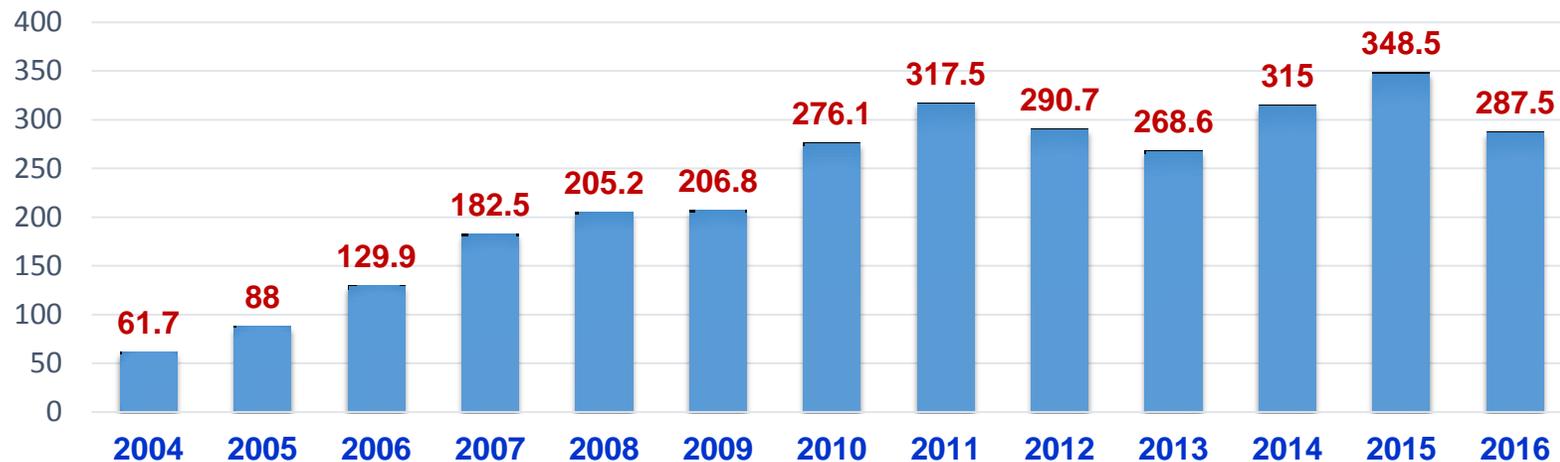
Proposed Global Risk Mitigation Fund



- **Total Per Year requirement = 6 billion US \$ (20% of 30 billion US\$)**
- **Investing Countries with ODA Budget**
 - **2 Billion US\$ from their total contribution e.g. 3.86 % of their 2015 figures**
- **Multilateral Banks Concessional and Non-concessional Flows**
 - **2 Billion US\$ from their total disbursements e.g. 8.99 % of their 2015 figures**
- **GCF**
 - **2 Billion US\$ from their total budget**

Global Clean Energy Investments

Global Clean Energy Investments (\$Bn)



Sector-wise Investment Profile - 2016

- In 2016, new investments in clean energy worldwide fell by 18% compared to last year.
- Investments down in Chinese and Japanese markets by 26% & 43% respectively.
- Chinese slowdown and falling costs of solar power were two major reasons for lower investments.
- Through overall investments in clean energy was down in 2016, total capacity installed in solar increased to 73 GW as compared to 56 GW in 2015.
- Investments in off-shore wind up by 41% in 2016.
- Biggest category of investment in clean energy in 2016 was through “asset finance of utility-scale” projects.
- Venture capital and private equity investment rose by 19% in 2016.

Factors leading to reduction in solar tariffs

De-risked Bidding



Guarantee by Off-takers

- Payment security with NTPC and SECI as the power off-takers in most bids
- Three month payment guarantee in case of delays from the distribution company



Online reverse bidding

- Enables developers to lower their bids in real time
- Promotes competition with transparent lower tariffs



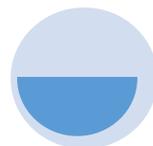
Scale of projects and Solar Parks

- Large scale projects being bid result in economies of scale
- Faster and easier implementation of projects
- Common pool of resources and better network utilisation

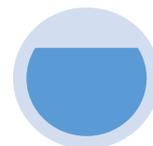
Reduction in EPC costs



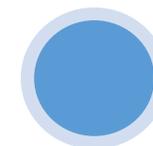
Reduced technology costs



Strong competition with lower margins for EPC's



Larger pool of investors



Concessional financing

Entry of major global players

ISA Programme

“Affordable Finance at Scale”

- ISA aims 1,000 GW of solar capacity by 2030 across its member countries.
- Mobilization of more than US \$ 1000 billion of investments that are needed by 2030 through various financial instruments
- Reduced cost of finance through Innovative financial instruments
- Critical Factor.

- Design & adopt converging best practices for setting up large scale portfolios of projects eligible to common credit enhancement mechanisms
- Make projects bankable and reduce risk perception by adopting common set of contractual documentation and practices for Power Purchase Agreements in public tenders and power procurement processes
- Establish International Credit Enhancement Mechanism to help de-risk investments and reduce the cost of financing
- Involve corporate sector through CII, FICCI, and Terrawatt Initiative for finalising the optimal terms and conditions for investment flows in ISA member countries
- Organize on an annual basis RE-INVEST to establish multi stake holder dialogue

A. 'First Loss Mechanism' under KfW Line of Credit for India - "Access to Energy Projects"

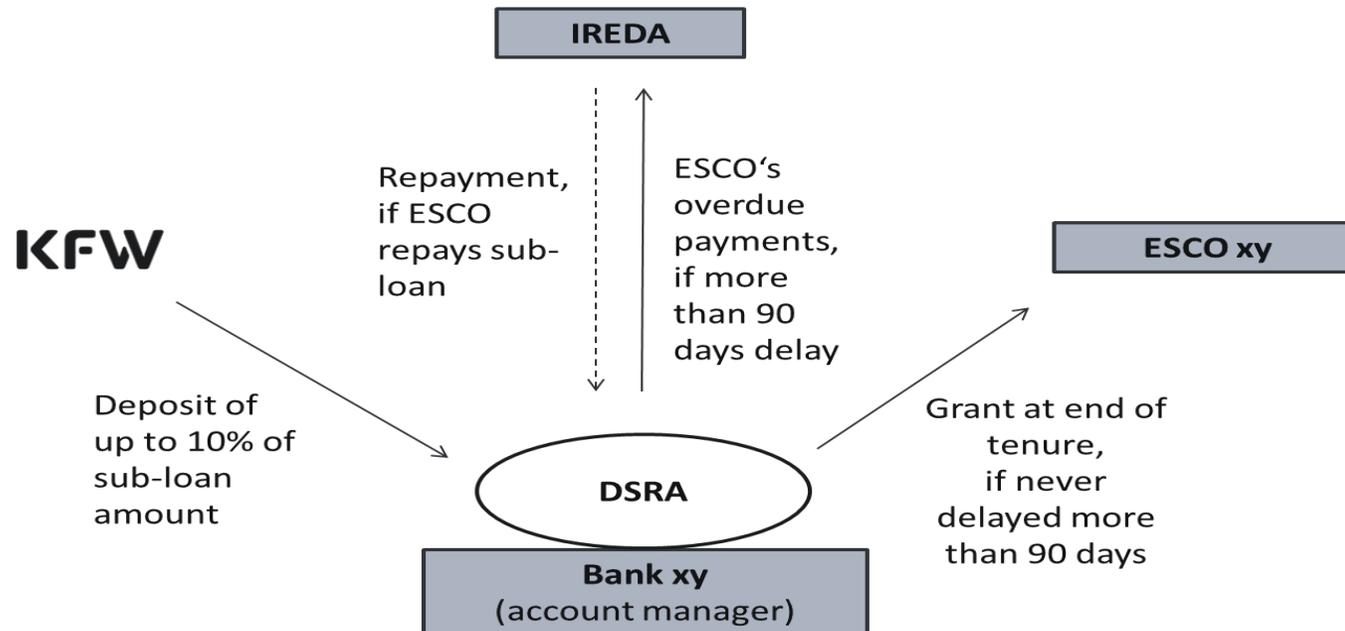
- Scheme aims to provide financing to Off-Grid Renewable Energy Projects/ Systems in remote areas. Systems may include PV Irrigation Pumps, Lighting systems, Decentralized Systems etc.
- The scheme addresses default risks by Developers (First loss)
- Under the above credit line, 4 million EUR Extra Grant also earmarked for 3 different purposes:
 - € 2 million for DSRA to reduce IREDA's default risk (First Loss) for individual sub-loans,
 - € 1 million to cover default risks of the overall portfolio of IREDA by establishment of a portfolio risk reserve account (PRRA),
 - € 1 million to RESCOs after successful commissioning, as a grant.

“First Loss Mechanism” under KFW scheme for India “Access to Energy”

First Loss under the scheme has compensation in 2 stages:

1. 1st Stage “First Loss” covered through Debt Service Reserve Account (**DSRA**)
2. In 2nd Stage, if balance DSRA is insufficient then “First Loss” is compensated to IREDA through “**Portfolio Risk Reserve Account (PRRA)**”

1. Structure of DSRA for an individual sub-loan



‘First Loss Mechanism’ under KfW Line of Credit for India “Access to Energy Projects”

Broad terms of the Scheme

- **Quantum of loan** : upto 70% of the total project cost
- **Minimum promoter contribution** : 30% of the project cost
- **Maximum Debt Equity Ratio (DER):** not more than 3:1
- **Repayment Period** : upto 7 years
- **Interest Rates:** : 9.75 % to 11.50%

B. Credit Enhancement Scheme (CES) - IREDA

- “Credit Enhancement” towards raising bonds in the domestic market by a RE project SPV/holding company
- Instrument helps the project to secure:
 - ❖ Reduced interest costs and
 - ❖ Longer tenor of Loans
- Release exposure limits with banks and FIs

Need

- Minimum desired level of rating “AA/AAA” for raising bonds.
- Improves the marketability and liquidity
- Completed projects can retire their existing debt

Credit Enhancement Scheme - Benefits

RE Projects

- Reduction in Debt Cost
- Longer Repayment Period
- Reduction of uncertainty in interest rates
- Freeing up exposure limits with Banks/FIs for new projects

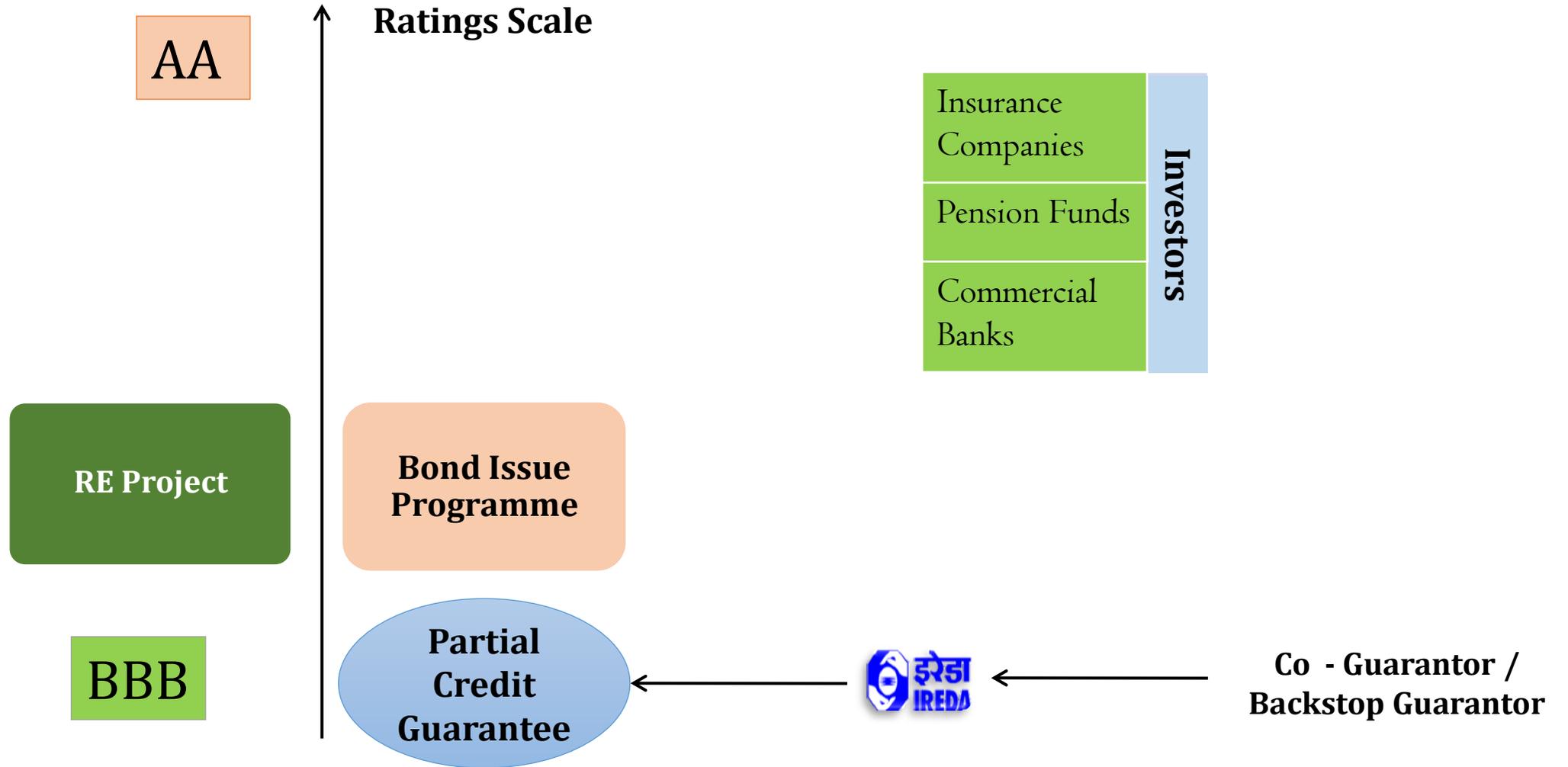
Investors

- Long term bonds for investment of funds with longer maturity
- Good avenue to invest in mandated sector
- Bonds would be Guaranteed

Existing Lenders

- Freeing up of capital & exposure limits

Credit Enhancement – Structure



Features of IREDA “CES” scheme

Nature of Credit Enhancement	Unconditional and irrevocable partial credit guarantee
Exposure Limit	Upto 25% of the proposed issue size of the bonds & Not more than 20% of Capitalized Project Cost
Tenure	Upto 15 years
Pricing	Guarantee Fee shall be in the range of 0.5% - 0.8% p.a (Based on Bond tenure, External Credit Rating etc.)

C. Letter of Comfort (LoC) / Letter of Undertaking for opening Letter of Credit (LC)

- **Letter of Credit (LC)** – Major requirement under EPC/ equipment supply contracts for Solar Projects
- **Long term LoC facilities** - Enable developers to avail cost benefits available under long term credit facilities such as **Buyers Credit/ Suppliers Credit** etc.

Benefits to Developers (Buyer's Credit)

- Equipment Supplier gets paid on due date; whereas Developer gets extended date for making an payment to supplier as per the cash flows.
- Developer can negotiate a better discount with Equipment Supplier and use the buyers credit route to avail financing.
- Developer can use this financing for any form of payment mode; open account, collections, or LCs.

IREDA Scheme Letter of Comfort (LoC) / Letter of Undertaking for opening Letter of Credit (LC)

- Period of LoC: up to 3 years
- Maximum Exposure: upto 70% of total IREDA Loan exposure
- Fee Structure:

LoC Type	Applicable Fee
For Short Term LoC (Upto 1 year)	0.50% (i.e. the Minimum applicable fee)
For Long Term LoC (beyond 1 year period and maximum upto 3 years)	0.65% - 1.25% (Depending on the CRRS rating of the project)

D. Partial Payment Security Mechanism (PPSM)

- Delays by DISCOMs in payments to developers impact the cash flows.
- Discourages lenders - charge higher risk premium
- Investors become cautious of investing
- Bids invited by SECI & NVVN – which act as intermediary, have their own payment security mechanism .
- Attract more competitive bids.
- Resulted in Tariff reduction by around 20 paise / Kwh. - equivalent to Rs. 30 cr p.a. for 1 GW.
- PSM can also help in partially replacing Viability Gap Fund(VGF).



PPSM - Key benefits

- Improving the bankability of PPAs.
- Union Government may benefit by saving in VGF.
- Offtaker (State Utilities) shall benefit with the reduced tariffs.
- Developers get low cost of funds, assured cash flows.
- Banks / FIs lower their Off taker risk.

These instruments can be adopted in other ISA member countries and replicated for large scale deployment of solar power projects at affordable costs.

Country wise total ODA contribution from 2005–2016													(in US\$ million)	
Sr. no.	Location	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*	DAC Countires
1	DAC Countries	115,298.70	109,093.80	100,329.50	112,241.70	114,280.80	120,630.30	119,673.30	115,307.60	121,838.30	123,945.80	131,555.30	143,328.70	
2	United States	33,404.30	27,300.80	24,620.90	29,300.90	31,714.10	32,227.80	32,970.60	32,046.20	32,168.90	33,451.50	30,985.50	33,160.10	DAC Country
3	Germany	10,311.50	10,534.70	11,187.70	11,978.30	10,534.00	11,817.10	12,086.30	11,822.90	12,342.80	14,121.80	17,940.20	24,407.70	DAC Country
4	United Kingdom	10,915.70	12,114.90	8,587.50	10,786.40	12,073.20	13,912.30	13,923.40	13,932.00	17,825.50	17,990.70	18,544.90	20,095.10	DAC Country
5	France	10,112.00	10,361.20	8,636.60	8,835.80	10,562.70	11,260.30	10,693.80	10,583.10	9,584.20	8,935.70	9,039.30	9,457.40	Other
6	Japan	11,269.80	10,223.10	7,218.50	8,012.10	7,165.10	8,037.70	7,457.10	7,209.70	9,587.90	8,458.70	9,202.80	9,286.70	DAC Country
7	Turkey	613.60	711.80	513.60	598.10	608.10	763.40	1,031.70	2,058.30	2,691.40	3,101.30	3,919.10	6,421.30	DAC Country
8	Netherlands	5,114.80	5,267.60	5,400.70	5,619.00	5,327.30	5,492.90	5,213.90	4,841.40	4,552.00	4,663.30	5,725.50	4,975.80	Other
9	Sweden	3,575.00	4,078.70	3,988.30	4,159.40	4,461.20	4,152.00	4,569.80	4,415.40	4,675.20	5,176.60	7,089.30	4,884.10	Other
10	Italy	5,254.60	3,652.00	3,564.80	4,041.40	2,785.30	2,652.50	3,595.10	2,427.20	2,909.40	3,372.80	4,003.40	4,812.50	DAC Country
11	Norway	3,078.20	2,971.10	3,338.80	3,158.60	3,734.50	3,634.40	3,433.80	3,444.90	3,987.60	3,882.90	4,277.70	4,609.90	DAC Country
12	United Arab Emirates	542.30	808.80	2,317.20	1,156.10	896.50	388.50	635.80	689.10	4,880.80	4,576.90	4,381.40	4,174.00	DAC Country
13	Canada	4,238.10	3,791.00	3,849.30	4,353.80	3,944.60	4,512.80	4,393.50	4,538.80	4,034.60	3,644.00	4,277.20	4,088.60	DAC Country
14	Spain	2,988.80	3,596.30	4,300.80	5,339.30	5,289.20	5,016.90	3,351.20	1,768.60	1,966.50	1,577.00	1,396.70	4,082.20	DAC Country
15	Switzerland	2,426.20	2,225.40	2,131.50	2,314.50	2,579.60	2,464.00	2,775.50	2,941.20	3,047.30	3,331.00	3,529.30	3,678.90	DAC Country
16	Australia	2,144.80	2,609.20	2,829.50	2,983.60	2,943.70	3,290.90	3,645.00	3,951.70	3,755.20	3,629.20	3,493.60	3,049.80	DAC Country
17	Denmark	2,245.50	2,311.80	2,368.40	2,362.50	2,437.30	2,536.90	2,453.60	2,378.10	2,486.30	2,531.70	2,565.60	2,370.30	DAC Country
18	Belgium	2,049.90	1,997.60	1,770.80	2,016.00	2,265.80	2,690.20	2,348.00	2,051.80	1,950.30	2,062.90	1,904.20	2,277.40	DAC Country
19	Korea	815.30	459.10	669.50	895.10	1,009.00	1,276.10	1,358.50	1,648.70	1,746.40	1,766.50	1,915.40	1,979.60	DAC Country
20	Austria	1,678.70	1,553.80	1,681.60	1,485.40	1,006.00	1,107.80	952.70	1,005.30	1,015.10	1,051.80	1,323.50	1,566.10	DAC Country
21	Russia						361.30	335.20	289.80	435.60	594.20	1,161.40	1,057.00	DAC Country
22	Finland	985.00	894.10	938.20	1,026.20	1,154.70	1,249.90	1,224.30	1,207.40	1,239.70	1,388.90	1,288.00	1,047.40	DAC Country
23	Ireland	689.00	943.90	983.00	1,044.30	864.50	838.00	786.30	733.30	732.70	715.60	718.30	803.60	DAC Country
24	Poland	217.60	300.40	312.50	273.00	336.70	323.60	340.40	368.20	412.70	380.30	440.90	628.90	DAC Country
25	New Zealand	336.90	337.70	353.30	393.00	383.10	357.40	392.90	406.90	397.70	426.40	441.70	430.50	DAC Country
26	Luxembourg	302.60	317.70	370.70	376.30	382.70	375.30	345.30	355.50	365.60	355.20	362.90	390.70	Other
27	Portugal	386.90	390.20	412.50	507.10	429.50	568.00	591.70	527.30	419.70	367.30	308.00	335.50	Other
28	Greece	376.10	397.00	415.30	531.60	462.90	403.50	319.30	267.30	193.90	204.70	238.70	264.60	Other
29	Czech Republic	150.90	168.20	162.30	189.40	174.10	188.10	191.70	183.20	173.60	180.90	199.00	257.30	DAC Country
30	Israel	136.50	125.80	142.00	150.20	142.60	155.80	208.70	190.40	194.70	188.80	197.90	214.00	DAC Country
31	Romania				112.20	144.50	107.30	145.10	129.30	121.00	192.50	158.10	199.60	Other
32	Hungary	99.90	151.60	86.90	81.80	98.70	97.30	112.50	103.20	107.90	122.10	155.60	156.40	Other
33	Slovak Republic	71.20	64.10	64.30	75.00	62.20	63.60	69.60	68.90	71.60	69.40	84.90	107.70	Other
34	Slovenia	36.70	45.10	48.80	55.40	58.50	51.10	51.60	51.80	52.30	52.00	63.30	79.30	DAC Country
35	Lithuania	19.30	28.90	46.50	39.80	32.80	34.10	43.40	46.20	42.70	38.20	48.10	57.70	DAC Country
36	Iceland	22.90	35.70	36.50	46.40	40.50	31.80	26.10	27.80	35.60	35.00	39.90	44.50	DAC Country
37	Estonia	13.10	17.60	16.60	19.80	17.40	18.20	21.30	21.40	26.40	31.70	33.90	43.30	Other
38	Latvia	14.50	14.30	14.50	16.80	18.70	14.90	16.30	18.90	20.20	21.30	23.20	27.60	DAC Country
39	Malta					13.00	13.00	17.70	16.90	16.50	18.40	16.60	20.60	DAC Country
40	Bulgaria						38.00	42.90	36.30	44.90	43.80	40.90		Other
41	Chinese Taipei	513.80	530.10	491.00	397.50	389.60	357.60	337.70	276.40	245.60	246.80	254.80		DAC Country
42	Cyprus	16.10	26.90	33.30	34.20	43.10	48.00	33.30	22.80	18.40	16.70	18.20		DAC Country
43	Liechtenstein			17.20	21.60	24.80	25.00	27.90	26.00	25.50	24.60	24.20		DAC Country
44	Saudi Arabia	1,091.50	2,092.60	1,481.40	4,547.40	2,967.70	3,267.00	4,512.80	1,179.00	5,135.00	12,282.70	6,758.20		DAC Country
45	Thailand		76.20	63.90	161.70	36.40	4.20	20.20	10.40	32.90	62.10	62.40		
Grand Total (including DAC countries)		118,259.60	113,527.00	105,466.70	119,497.00	119,615.90	126,226.50	127,103.50	120,319.00	135,769.80	145,385.90	148,653.70	155,543.70	

Source: OECD (2017), Net ODA (indicator). doi: 10.1787/33346549-en (Accessed on 02 June 2017)

Data link: <https://data.oecd.org/oda/net-oda.htm#indicator-chart>

Note* : Data highest to lowest ODA contribution in 2016

Multilateral & Bilateral ODA donor during 2011 -2015

	Net disbursements				
	2011	2012	2013	2014	2015
CONCESSIONAL FLOWS					
<i>International Financial Institutions</i>					
AfDB	2 272	2 454	2 324	2 042	2 182
AsDB	863	716	1 004	1 477	1 446
CarDB	39	42	65	87	29
EBRD	-	-	-	-	-
IDA	6 995	6 840	8 172	10 262	10 055
IDB Sp.Fund	1 497	1 413	1 930	1 719	1 793
IMF ^b	772	769	620	180	503
Nordic Dev. Fund	52	38	28	26	12
Total IFIs	12 490	12 272	14 144	15 794	16 021
<i>United Nations ^c</i>					
IFAD	382	449	433	320	313
ILO	-	238	298	223	286
UNAIDS	265	242	246	239	241
UNDP	490	483	465	459	420
UNEP	-	-	-	-	125
UNFPA	314	332	354	339	313
UNHCR	441	424	417	480	461
UNICEF	1 089	1 140	1 230	1 295	1 395
UNRWA	608	667	539	680	771
UNTA	-	-	-	-	-
WFP	337	354	364	309	286
WHO	452	397	474	471	664
Other UN ^d	145	141	588	152	148
Total UN	4 523	4 868	5 408	4 968	5 425
Adaptation Fund	47	24	7	13	-
Arab Funds ^e	730	626	761	744	345
CEB	131	93	117	69	43
CIF	-	-	151	350	245
EU Institutions	17 045	17 173	15 646	16 389	13 546
GAVI	819	1 068	1 544	1 415	1 725
GEF	666	671	752	841	813
GGGI	-	-	16	16	9
Global Fund	2 612	3 307	3 946	2 847	3 172
Montreal Protocol	8	5	37	45	45
OSCE	151	135	134	131	115
Total concessional	39 224	40 242	42 664	43 621	41 504
NON-CONCESSIONAL FLOWS					
AfDB	2 050	2 660	1 065	1 743	997
Arab Funds ^e	1 899	916	981	935	1 289
AsDB	3 155	3 982	1 581	3 874	6 306
CarDB	36	- 10	- 10	- 1	35
CEB	244	- 16	109	110	71
CIF	-	-	69	55	-
EBRD	2 304	1 768	1 679	1 755	2 247
EU Institutions	- 794	- 999	- 535	-1 943	-1 356
IBRD	1 810	7 725	8 026	7 831	11 588
IDB	2 655	1 914	1 419	3 643	3 946
IFAD	11	28	27	66	82
IFC	1 426	2 181	2 013	-	-
Total non-concessional	14 797	20 149	16 424	18 066	25 205

Source: OECD

ODA donor (Bilateral & Multilateral) for Solar Energy during 2007-2015		Year of ODA Contribution for Solar Energy									
Sr. No.	Donor Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	Grand Total
1	African Development Bank		221.74				222.79		109.90	64.79	619.22
2	African Development Fund						123.68				123.68
3	Arab Fund (AFESD)		0.95				-				0.95
4	AsDB Special Funds							114.11	19.45	1.82	135.38
5	Asian Development Bank						300.80	82.00	291.00	14.47	688.27
6	Australia				-						-
7	Austria	0.12	0.35	1.25	0.16	0.36	1.65	1.15	4.87	0.34	10.25
8	Belgium		0.01	0.02	0.03	0.06	0.02	0.01			0.16
9	Canada			0.04		0.09	23.54	15.19		1.17	40.04
10	Climate Investment Funds						67.35	240.69	292.81	242.44	843.30
11	Czech Republic					0.43	0.75	0.06	0.01		1.25
12	Denmark				0.32	0.05	0.11	-			0.48
13	EU Institutions	-	6.63	29.43	-	-	5.93	35.23	132.68	275.43	485.33
14	Finland	0.05	0.24	0.77	-	1.27	-	0.08	0.17	0.15	2.72
15	France			1.37	0.57	0.58	13.76	159.06	29.88	53.59	258.81
16	Germany	0.27	11.27	16.04	24.43	32.23	103.91	143.16	885.57	160.87	1,377.76
17	Global Environment Facility				8.99	2.68	10.93	9.23	8.45		40.27
18	Greece	0.22	0.13								0.35
19	IDB Special Fund				0.51					-	0.51
20	Inter-American Development Bank									137.55	137.55
21	International Bank for Reconstruction and Development				157.16	197.33	-	60.22	380.00	77.02	871.74
22	International Development Association	16.83	5.75	38.26	4.87	6.47	158.29	22.90	128.83	12.04	394.24
23	International Finance Corporation						214.95	171.11	251.70	175.72	813.49
24	Ireland	0.01	0.02			0.67	0.10		0.26		1.08
25	Islamic Development Bank					197.33	15.04				212.37
26	Italy	0.45	0.07	0.04	1.13	2.24	3.57	1.73	0.34	0.56	10.13
27	Japan		85.31	55.05	148.45	7.48	9.45	1.41	1.48	0.65	309.28
28	Korea		1.80	19.10	16.59	14.92	3.18	47.73	0.52	4.24	108.07
29	Luxembourg	0.48	0.01	0.32	0.23	0.04	0.52	0.19	0.03	0.11	1.94
30	Netherlands		13.94	-	0.43	-		-			14.36
31	New Zealand					10.14	5.66	8.47	22.76	3.36	50.40
32	Nordic Development Fund			10.32							10.32
33	Norway	0.56	2.37	3.19	1.26	6.43	13.61	5.07	3.55	2.98	39.01
34	OPEC Fund for International Development					0.84	14.10	2.21	67.00		84.14
35	Poland							0.09	0.03	0.17	0.28
36	Portugal			0.04	0.15	2.84	0.02	1.91	0.30	0.23	5.49
37	Slovenia						0.01	0.29		(0.18)	0.13
38	Spain	7.33	17.76	135.31	2.82	1.79	0.05	0.43	0.30	0.06	165.85
39	Sweden			10.04			1.04	0.03	0.11	0.06	11.27
40	UNDP	-					0.00	0.15	0.13	0.15	0.44
41	United Kingdom					3.47					3.47
42	United States	0.56	1.09	1.24	2.46	2.78	0.01	1.15	0.32	9.57	19.18
	Grand Total	26.89	369.43	321.85	370.55	492.52	1,314.84	1,125.04	2,632.46	1,239.39	7,892.96

Source: OECD DAC

Link: <http://www.oecd.org/dac/stats/energy-relatedaiddataatag glance.htm>

Note: IBRD and IDA are part of World Bank

List of OECD-DAC Member Countries

Sr. no	Country	Date
1	AUSTRALIA	07-Jun-71
2	AUSTRIA	29-Sep-61
3	BELGIUM	13-Sep-61
4	CANADA	10-Apr-61
5	CHILE	07-May-10
6	CZECH REPUBLIC	21-Dec-95
7	DENMARK	30-May-61
8	ESTONIA	09-Dec-10
9	FINLAND	28-Jan-69
10	FRANCE	07-Aug-61
11	GERMANY	27-Sep-61
12	GREECE	27-Sep-61
13	HUNGARY	07-May-96
14	ICELAND	05-Jun-61
15	IRELAND	17-Aug-61
16	ISRAEL	07-Sep-10
17	ITALY	29-Mar-62
18	JAPAN	28-Apr-64
19	KOREA	12-Dec-96
20	LATVIA	01-Jul-16
21	LUXEMBOURG	07-Dec-61
22	MEXICO	18-May-94
23	NETHERLANDS	13-Nov-61
24	NEW ZEALAND	29-May-73
25	NORWAY	04-Jul-61
26	POLAND	22-Nov-96
27	PORTUGAL	04-Aug-61
28	SLOVAK REPUBLIC	14-Dec-00
29	SLOVENIA	21-Jul-10
30	SPAIN	03-Aug-61
31	SWEDEN	28-Sep-61
32	SWITZERLAND	28-Sep-61
33	TURKEY	02-Aug-61
34	UNITED KINGDOM	02-May-61
35	UNITED STATES	12-Apr-61

Introduction – Philippines

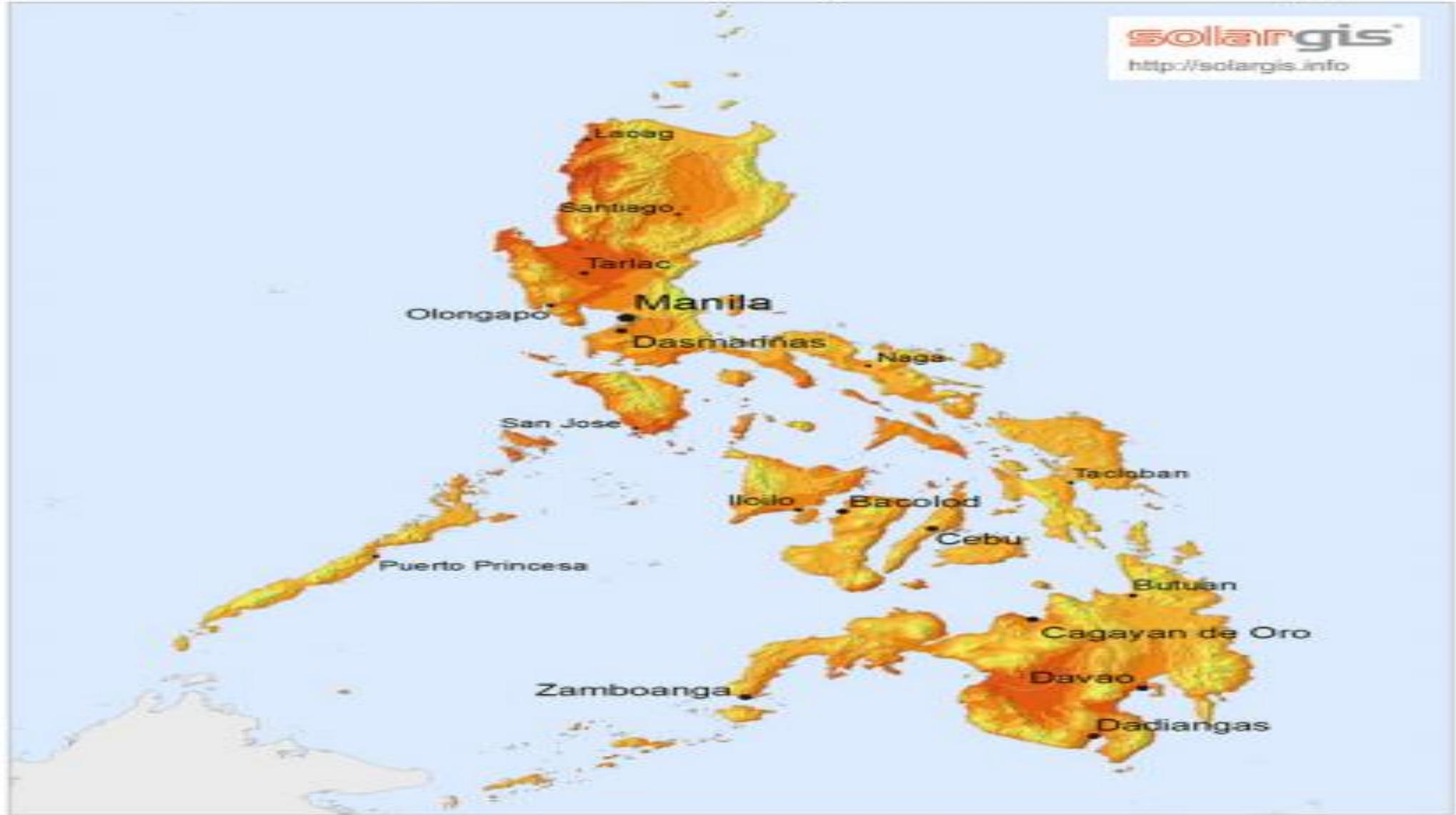
Strengths	Weaknesses
<ul style="list-style-type: none">• Almost a gigawatt of solar energy has already been installed in the Philippines;	<ul style="list-style-type: none">• Economy is reliant on tourism, agriculture and expat income;• Nationwide electricity access is at only 89.1%.
Opportunities	Threats
<ul style="list-style-type: none">• The geographical isolation of some of the 7,000 Philippine islands makes developing off-grid solar very lucrative;• With one of the highest birthrates in Southeast Asia, energy demand is bound to increase over the next decade.	<ul style="list-style-type: none">• Fragile political stability thanks to secessionist Muslim movement in the South;• Duterte administration has vowed to pursue power generation with the lowest cost, namely thermal power.

Economic Figures	
GDP	\$292 billion
GDP per capita	\$2,640
GDP growth	6.6%
Inflation Rate - Consumer Prices	3.4%
Population	104,000,000
Credit rating (S&P / Moody's)	BBB / Baa2
Corruption Perception Index (CPI)	101
Ease of doing business index	99
Access to electricity	89.1%
Power consumption per capita	706 kWh
Renewable electricity as % of total output	25.6%
Renewable consumption (% of total consumption)	28.7%

Source: Solar Plaza

Global Horizontal Irradiation (GHI)

Philippines



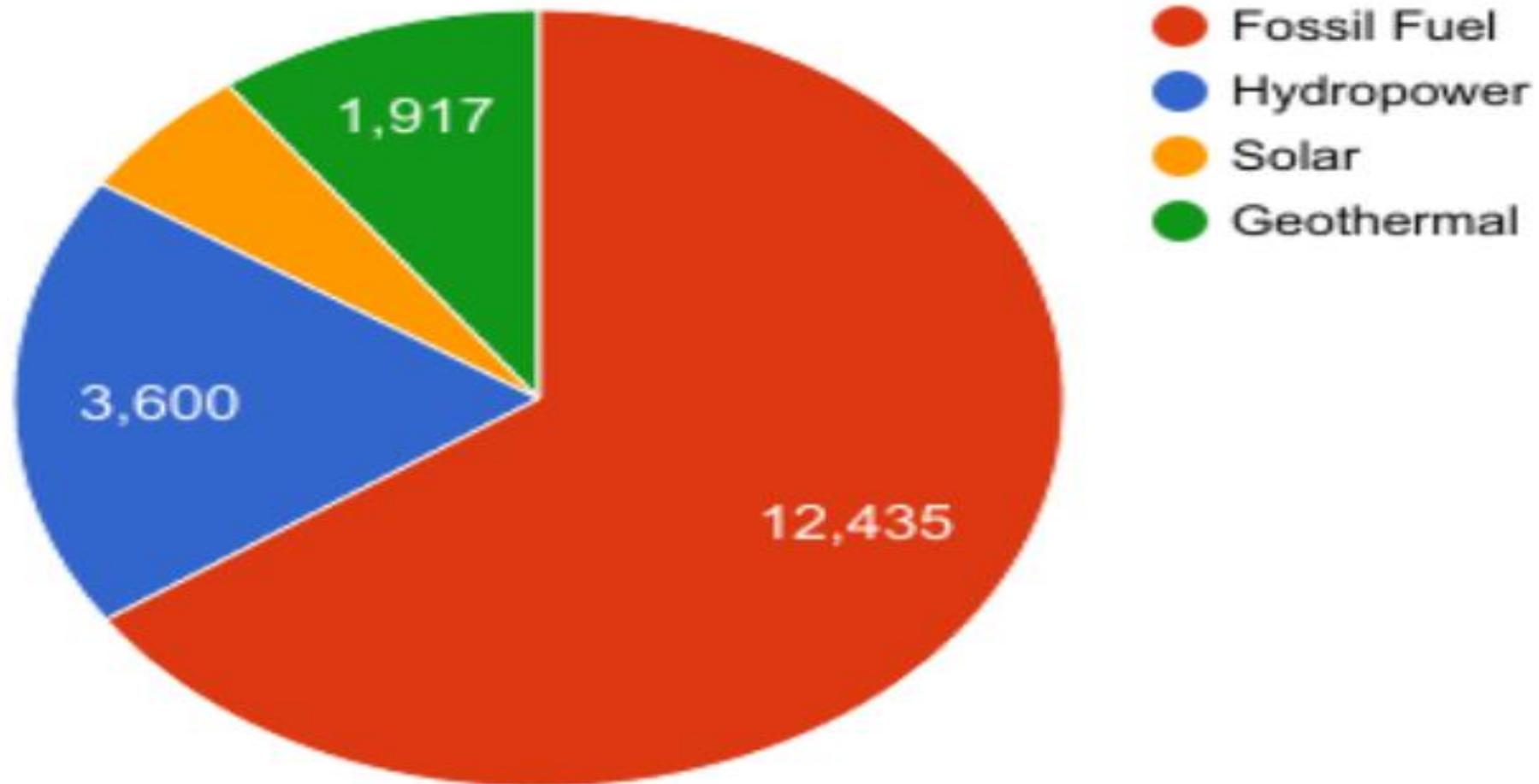
Average annual sum, period 2007-2013
Color scale: < 1500, 1700, 1900, 2100 kWh/m²

0 100 km

GHI Solar Map © 2014 GeoModel Solar

ELECTRICITY MIX

Philippines' Total Installed Capacity by Source
(in MW)



RE Data – Philippines

Renewable source	Period of time	Feed-in tariff rate in PhP/kWh	Degression rate	Installation targets in MW
Wind	20 years	8.53	0.5% after 2 years from effectivity of FIT	200
Biomass		6.63	0.5% after 2 years from effectivity of FIT	250
Solar		9.68	0.6% after 1 year from effectivity of FIT	50
Run-of-river hydropower		5.90	0.5% after 2 years from effectivity of FIT	250