Energy imperatives

- The existing per capital electricity consumption, historical growth in electricity demand and current solar installed capacities are the key differentiating parameters under energy imperatives. The Achiever countries have scored maximum on this criterion.
- Influencer countries have demonstrated growth in electrical demand and solar installed capacities. In addition to the high-income economies, a few developing countries have also performed relatively better in energy imperatives owing to their aggressive solar deployment in recent years mostly in off-grid solar primarily on account of rapid electrification
- The Progressive countries have a strong potential of off-grid as well as on-grid solar but the same is yet to be explored. Owing to low electrifications levels, the demand growth is not strong but is expected to grow once electrification starts even using off-grid solar plants.
- Most Potential countries have had a good demand growth but score low in solar deployment over the years.

5. Way forward

The 2020 edition of the EoDS report focuses on developing a robust and comprehensive framework for country evaluations. Future editions will aim towards further strengthening stakeholder consultations through regional and country level engagements which are quintessential in further reinforcing the EoDS framework. It will also enable seamless and more updated data collection for the upcoming editions of the EoDS report.

Going forward, greater emphasis will be given to online dashboards for better visualisation and user interaction which will enable the ISA in moving from a paper based report to interactive analysis. Transition towards online report is expected to further facilitate greater participation from member countries. It will also provide a more dynamic experience for member countries by adopting features such as real time data sharing by members to faster response on the draft analysis and reporting.

The online mode of the EoDS report will also ensure agility and adaptability to enable inclusion of new parameters and indicators in the framework as well as reducing the annual reporting frequency to half yearly or even quarterly reporting.

The 2020 report classifies countries in 4 broad categories, i.e. Achiever, Influencer, Progressive and Potential. As the EoDS framework matures, the future editions will evolve towards absolute rankings that would present a better country to country comparison framework leading to higher response from countries to work towards improving individual rankings.

Further, few additional features are planned in the future editions such as country profile matching to draw finer regional and county-level insights and developments where countries would be able to draw more objective and actionable insights from the practises adopted by high performers. The platform will aim to accommodate new opportunities listing and development review articles/ stories providing more visibility for the member countries. The EoDS concept also has the potential to evolve as a base case to plan Technical Assistance for the ISA member countries to further enhance their solar investment environment.

Note: Results from the assessment of countries across the drivers have been presented in the Appendix 2 of the document

Approach and methodology

1. Overview

1.1 Framework for Ease of Doing Solar 2020 report

A. Guiding principles & scoring methodology

How it is done?

- Review of past similar studies to assess various methodologies
- Parameters (KRA) and KPIs identification, selection and formulation of rationales
- Sources-based classification of KPIs
- Criticality assessment and assigning weights for quantitative analysis

Key outputs

- Drivers & KPIs
- Rationales and classification

B. Scoring model & data research

How it is done?

- Secondary data collection (based on credible data sources)
- Primary data collection (NFPs and country-focused research)
- Identify and address data gaps and key roadblocks for each country
- Determining weightages for drivers – learnings from similar studies

Key outputs

- Weights for the KRAs and KPIs
- Validated data set and scoring model for the analysis

C. Data sensitization and verification

How it is done?

- Consensus building with stakeholders
- Preparation of country specific reports
- Country specific consultations

Key output

- **Ease of Doing Solar 2020 report**

1.2 Classification based on overall scores

Achiever	Countries with most favourable technical and commercial conditions for solar and perceived as most attractive for investments in solar.
Influencer	Countries with moderately favourable technical and commercial conditions for solar and perceived as moderately attractive for investments in solar.
Progressive	Countries which are at initial stages in development of a favourable ecosystem in terms of commercial feasibility and investments for solar.
Potential	Countries with untapped potential and at a nascent stage for development of favourable ecosystem.

Ranking framework shall evolve from “Classification” to “Absolute ranking” over the years as the EoDS concept matures and used as a guiding tool for benchmarking by stakeholders

2. Guiding principles

2.1 Guiding principles for the EoDS 2020 report

The EoDS report has country-specific snapshots and analysis that assess a country's preparedness in attracting and sustaining investments in the solar space. The analysis has been planned to encompass multiple solar segments:

1) Grid connected solar

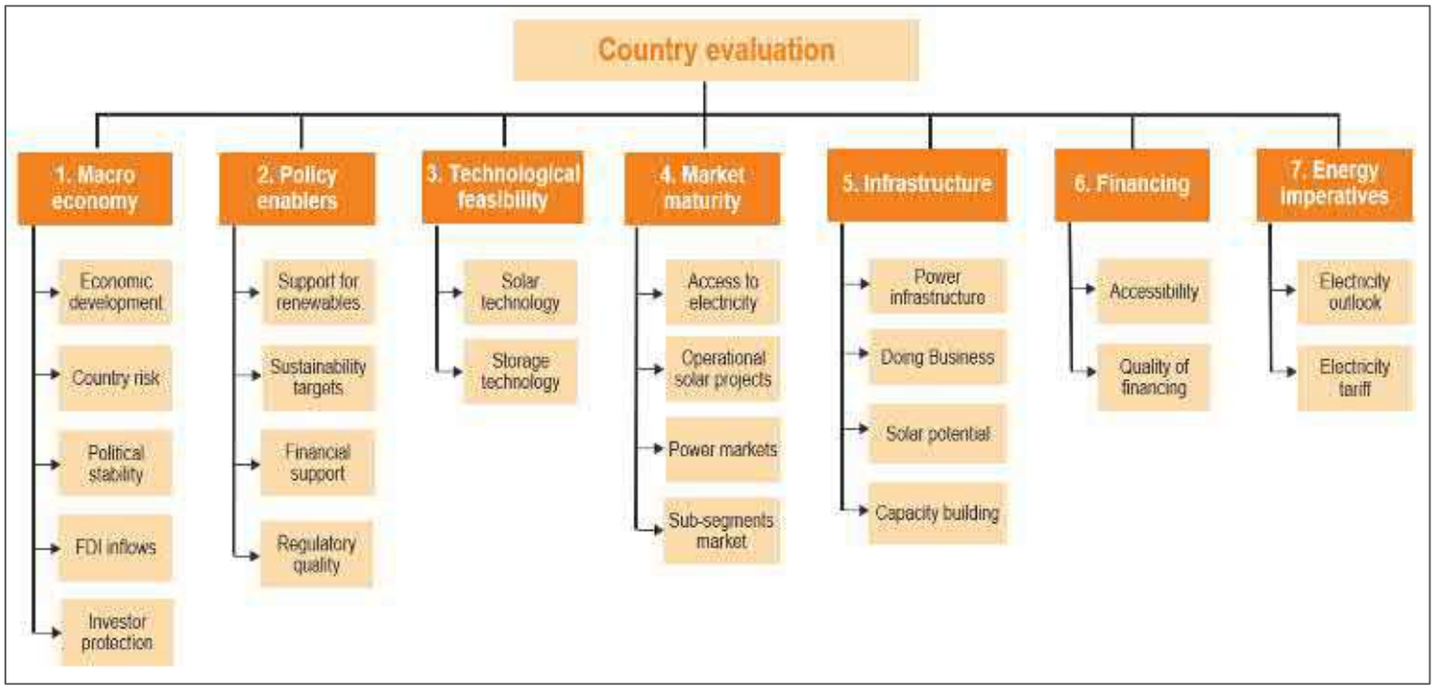
2) Solar mini-grids

3) Solar rooftop

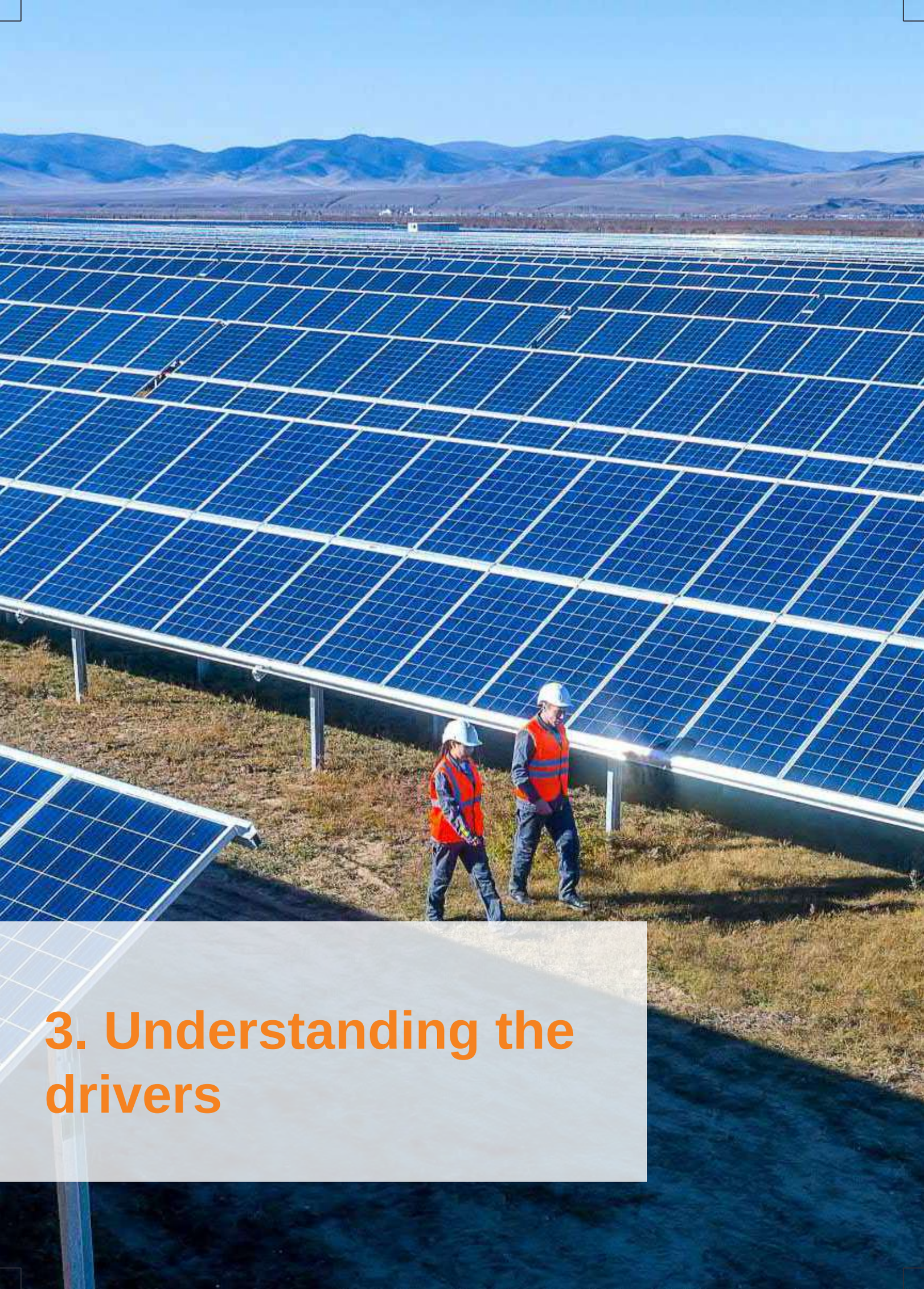
4) Solar home systems

The assessment has been carried out for each of the member countries across seven key drivers: macroeconomy, policy enablers, technical feasibility, power market maturity, infrastructure, financing, and energy imperatives. Nearly 38 indicators have been used to develop the analysis of these parameters and drivers. Each of these parameters demonstrates the Ease of Doing Solar in the ISA member countries.

The guiding principles– drivers, parameters and indicators- have been developed based on the review of similar studies like 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; 4). Renewable Energy Country Attractiveness Index by EY; 5). Regulatory Indicators for Sustainable Energy (RISE) Study and the review of multiple reports and analysis from 1). International Energy Agency (IEA); 2). International Renewable Energy Agency (IRENA); 3). Lighting Global; 4). GOGLA; 5). World Bank and many others. The basic skeleton of the evaluation is similar to the pilot study conducted last year.



Guiding principles – drivers & evaluation parameters considered for EoDS 2020 analysis



3. Understanding the drivers

3.1 Understanding the drivers

The table below provides details of each of the seven drivers of the EoDS 2020 framework. Key parameters are also listed which were used to analyse the performance of the countries against the drivers.

Drivers	Description	Parameters
Macroeconomy	Macroeconomic parameters shall be evaluated to understand the economic strength, in terms of size of the economy, growth prospects and maturity. The macroeconomic driver also helps the stakeholders assess the market and associated risks at a macro-level. Strong macroeconomic indicators, for a country, signify business opportunities for the investors/ developers and also translates to an optimistic view of the future of solar sector in the country.	• Economic development • Country risk • Political stability • FDI inflow • Investor protection
Policy enablers	Effective policies and quality of regulatory ecosystem act as key enablers for growth in any sector. This is an important driver for the governments and investors to understand the road blocks limiting the growth of solar segment in the country. Government initiatives, such as fiscal incentives and subsidies for solar energy deployment, not only helps in attracting new investments in the sector but also minimises the risks associated with such projects.	• Support for renewables • Sustainability targets • Financial support mechanisms • Regulatory quality
Technological feasibility	Analysis of various technical aspects is of utmost importance in order to determine the feasibility and cost-effectiveness of a solar project. Indicators such as solar irradiation in the region and capacity utilisation factor impact the viability of solar Projects.	• Solar irradiation levels • Storage technology
Market maturity	Market maturity is a critical driver for the investors and project developers to have a better understanding of the overall electricity market in the country. A mature market ensures minimum risks and high certainty of returns to the investors, but also offers high degree of competition. On the other hand, a less mature market may offer huge opportunities for the new entrants, but with a higher risk quotient.	• Access to electricity • Operational solar projects • Power markets • Market for solar sub-segments

Drivers	Description	Parameters
Infrastructure	Adequate infrastructure is essential to support the development of solar projects. Availability of adequate transmission & distribution infrastructure/ network, efficiency of power utilities and capacity building activities are essential components of infrastructure that translates to the success of solar industry in the country.	• Power infrastructure • Ease of Doing Business • Solar potential • Capacity building
Financing	Analysis of domestic banking ecosystem is essential to understand business viability and risks in a country. Strong financial ecosystem and innovative financial products are important factors for large scale solar deployment. While availability of appropriate financing models is essential to attract private investments, low cost of financing is also critical for the commercial viability of the projects and off-grid products deployment.	• Accessibility to financing • Quality of banking ecosystem
Energy imperatives	This parameter evaluates the total electricity landscape in terms of consumption, tariffs and installed capacities. The current status of off-grid solar products is also analysed, which can help investors identify the country's potential for off-grid installations.	• Electricity sector outlook • Electricity tariffs

4. Determining weightages for drivers

4. Determining weightages for drivers

Assigning weights for drivers forms a critical part of the study. It captures relative importance of the drivers and helps in arriving at the overall classification of the countries. The weightages for the drivers in the EoDS 2020 report have been determined based on the learnings from similar studies and consultations with domain experts.

Learnings from similar studies

- Multiple similar studies and their mechanisms for weightage determination have been analysed to understand existing methodologies in the system.

Sample analysis:

- State Rooftop Solar Attractiveness (SARAL), 2019 Index covering 31 Indian states: Basis the importance/ ranks given by different stakeholders, the weightages to the parameters were decided.
- Ease of Doing Business, 2020 by the World Bank uses a direct method: Weighing all topics equally and giving equal weight to each component within each topic.

Ease of Doing Business

Parameters	Weightage
Starting a business	9.09%
Dealing with construction permits	9.09%
Getting electricity	9.09%
Registering property	9.09%
Getting credit	9.09%
Protecting minority investors	9.09%
Paying taxes	9.09%
Trading across borders	9.09%
Enforcing contracts	9.09%
Resolving insolvency	9.09%
Labour market regulation	9.09%
Total	100%

SARAL – State Rooftop Solar Attractiveness Index

Parameters	Weightage	Sub-parameters	Weightage
Robustness of Policy framework	20%	Level of policy support	33.3%
		Billing Mechanism	33.3%
		Covenants	33.3%
Effectiveness of policy support/ implementation	26.3%	Ease of application	60%
		Power offtake attractiveness	10%
		Impact of Policy	10%
		State of affair of DISCOMs	20%
Investment climate	16.8%	Driver for rooftop solar uptake	33.3%
		Maturity of the Market	33.3
		Ease of financing	33.3%
Consumer experience	26.3%	Pre-installation consideration	30%
		During installation	40%
		Post-installation experience/costs	30%
Business ecosystem	10.6%	Business enablers	37.5%
		Fiscal and Regulatory Environment	37.5
		Economic outlook	25.0%
Total	100%		100%

5. Data research

5.1 Data research – secondary

- Database-based research has been carried out for major set of Indicators. Competent databases from World Bank, IMF, UN Foundation, IEA, IRENA, etc. have been used.
- Country-focused research has been carried out to address data gaps for a small set of countries and to develop insights on member countries.

5.2 Data research – primary

A questionnaire was developed and circulated among the National Focal Points (NFPs) of the member countries. A part of the questionnaire is appended below:

S.No.	Key Indicators	Response	UoM	Source of Information (if applicable)	Year of Information	Remarks
1	**Does the country have Renewable Energy Targets?**		Yes/No			
2	**Are the following mechanisms available for Renewable Energy**					
	Accelerated Depreciation of Renewable Energy Assets		Yes/No			
	Subsidy provisions for Renewable Energy		Yes/No			
	Feed-in-Tariffs for Renewable Energy Supply to the Grid		Yes/No			
	Revenue Based Incentives		Yes/No			
	Presence of Net metering/ Gross metering policies and regulations		Yes/No			
3	**Is there a mandate for Renewable Purchase Obligations (RPO) for Distribution utilities/ Retailers/ DSOs?**		Yes/No			
4	**Are there specific policies/ schemes for the following Solar**					
	Solar Rooftop		Yes/No			
	Solar Mini Grids		Yes/No			
	Solar standalone systems		Yes/No			
	Utility scale Solar		Yes/No			
5	**Are following incentives available?**					
	Import duty waivers for Solar Developers		Yes/No			
	Tax waivers for manufacturers of raw materials (modules, off grid appliances, SHS, etc.)		Yes/No			
6	**Are there Government Trainings/ certifications/ academic programs focusing on Solar industry for people?**		Yes/No			
7	**Kindly provide the following information to understand the Institutional Structure in the Power sector.**					
	Have the Power sector operations been segregated into Generation, Transmission & Distribution?		Yes/No			
	Is the Power sector regulated?		Yes/No			
	Are there regional/ national Load dispatch centres for power grid operations?		Yes/No			
	Are there Technical Standards pertaining to Power equipments?		Yes/No			
	Does the country have a grid code that clearly specifies connection procedures for ensuring Grid operations?		Yes/No			
	Is there a dedicated Nodal agency for Renewable Energy?		Yes/No			
8	**Do the players in the Power industry have access to any Power exchange/ Power trading platform?**		Yes/No			

Procedure:

- Questionnaire was prepared in English, French and Spanish languages to facilitate prompt data collection from primary sources – NFPs.
- Responses were sought as qualitative information (eg.: Yes/ No) and data-based information for nearly 17 and 28 Indicators respectively.
- The research is based on data for the year 2019. However, in instances where data was not available for 2019, earlier years' data was used.

Country reports