IRENA RE statistics

RE Statistics
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IRENA
International Renewable Energy Agency

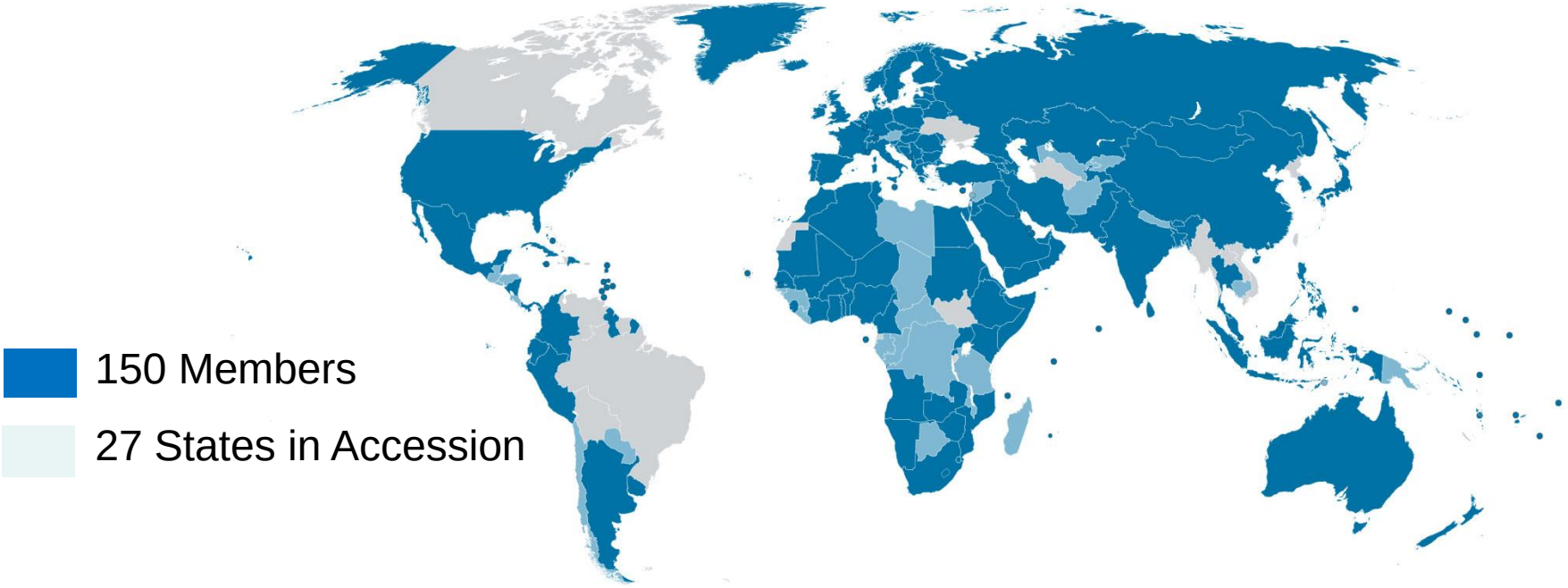
Tracking progress toward energy related SDGs in the Arab region
UN-ESCWA EGM, 24-25 January 2017 - Beirut, Lebanon

Outline

- Background
- IRENA Statistics: activities and updates
- Other Activities

Background - IRENA

- Established in 2011
- First global intergovernmental organisation headquartered in Middle East
- Headquarters in Masdar City, Abu Dhabi, UAE
- IRENA Innovation and Technology Centre – Bonn, Germany
- Permanent Observer to the United Nations – New York



Background - RE data challenges

Renewable energy	Nonrenewable energy
• Thermal and non-thermal	• Thermal energy
• Great variation in scale	• Often large-scale
• Off-grid more common	• Mostly grid-connected
• Many producers	• Industrial/utility production
• Biofuels very variable	• Fuels well specified
• Considerable innovation	• Stable technologies

- Less familiarity with measurement conventions
- Hybrid systems, co-firing, accounting for heat

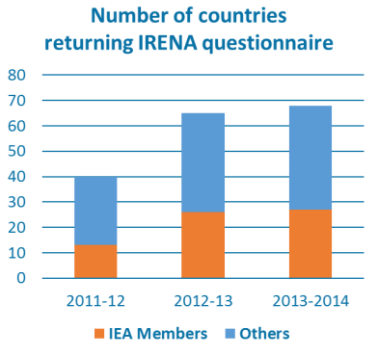
Background – RE data needs

- Energy sector transformation (targets)
- Energy SDG: access; renewables; efficiency
- Market developments, investments, etc.
- Renewable energy is about more than just MW

IRENA RE Statistics

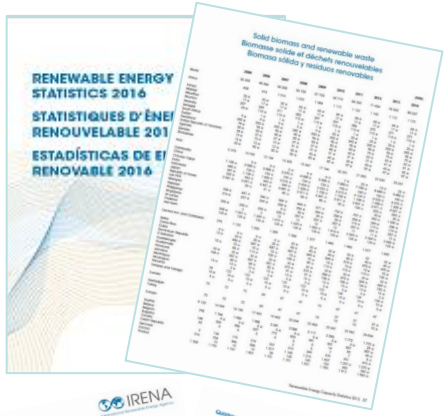
Data Collection

- 4th collection cycle underway
- Increasing response rate
- Coordinating with IEA, RCREEE, UN-ESCWA and others on timing and trainings



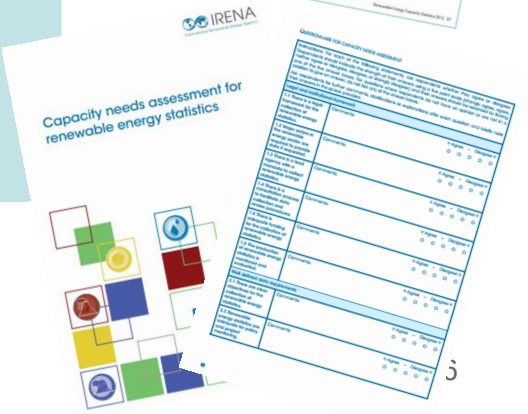
Dissemination

- Statistical Yearbook (exp. June 2017)
- REsource dashboards
- Offline Excel-Tool also through REsource



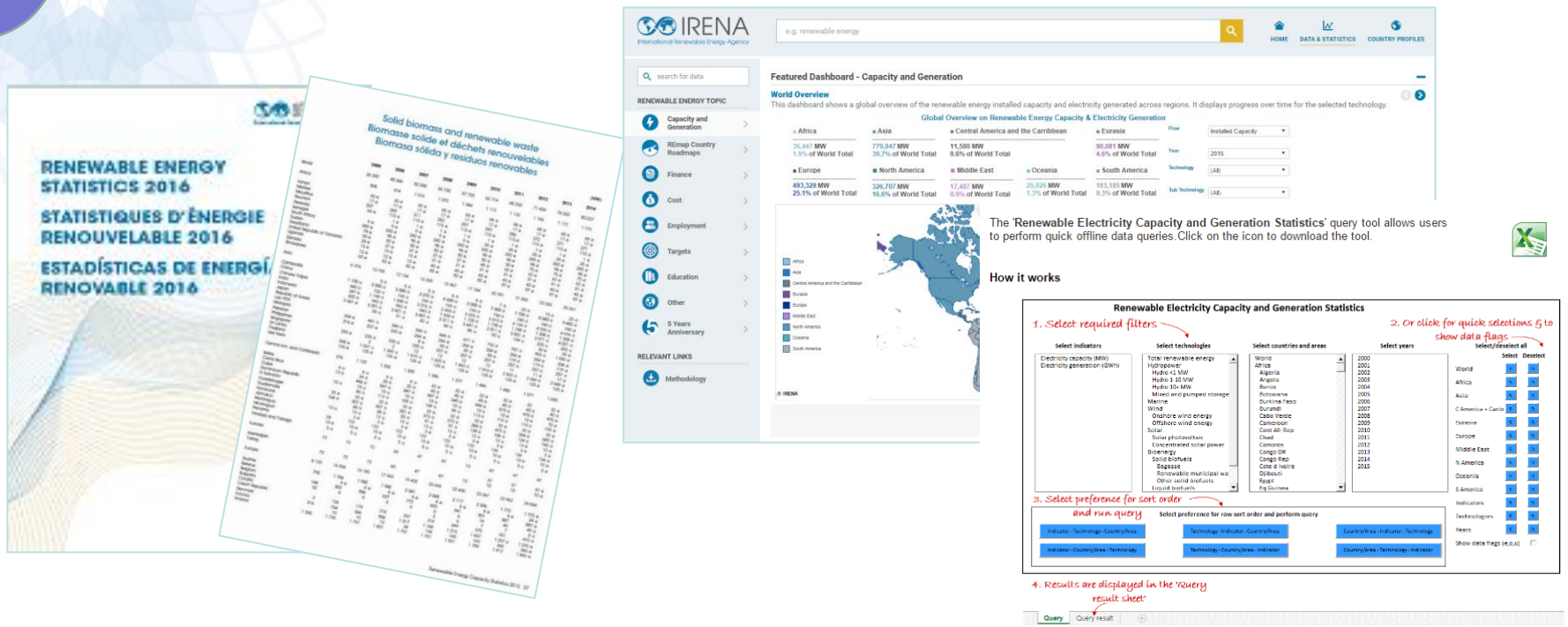
Capacity Building

- Capacity needs assessment tool
- Data collection guidance and pilot studies
- Trainings



Upcoming: Middle East and Horn of Africa Renewable Energy Statistics Training, 20-22 February 2017 in Abu Dhabi, UAE

Data dissemination

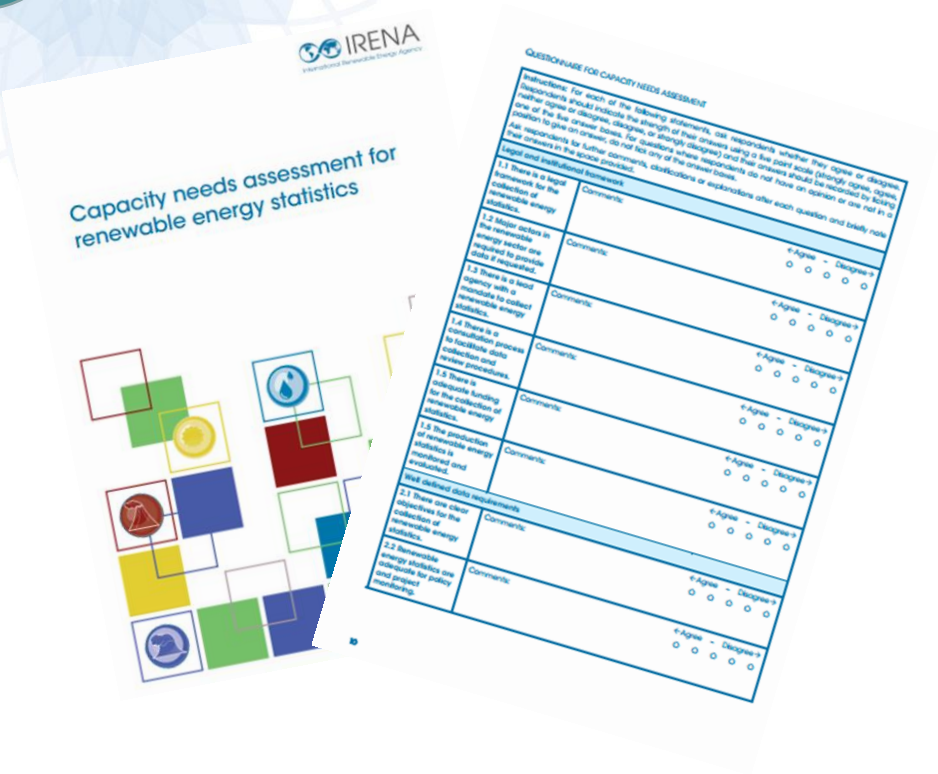


Statistical products

- RE statistics Yearbook 2016 (book and online)
- REsource charts and tables (online)
- Excel Data Tool (download)

Feedback appreciated: statistics@irena.org

Capacity Needs Assessment Tool



- Guide to help energy statisticians understand the various elements and processes involved in renewable energy data collection and management.
- Includes assessment tools that countries can use to identify areas for improvement and suggests priority actions.

Solid legal and institutional framework

Well defined data requirements

Sufficient skilled personnel

Clear methodologies and processes

Appropriate data collection mechanisms

Analysis and validation procedures

Mechanism for data dissemination

Tool to identify potential areas for improvements and capacity building priorities

Data Collection Guidance

IRENA is developing guidance to assist countries in collecting renewable energy data on the ground including:

- Key survey questions
- Field estimation and measurement techniques
- Use of administrative and other data
- Data analysis methods

Initial modules focus on the following areas:

- Measuring small-scale biogas capacity and production (draft under review)
- Measuring non-household bioenergy use
- Off-grid solar PV system measurement and estimation methods

IRENA will also be conducting sample household surveys and biogas data collection studies in select countries to test and refine data collection methodologies.

Renewable Energy Statistics Training

IRENA organises national and regional trainings to build capacity for collecting, analyzing and disseminating renewable energy statistics.

Past regional trainings include:

- **Southern Africa Renewable Energy Statistics Training**, December 2015 in Mbabane, Swaziland.
- **UNECE/FAO-IRENA Bioenergy from the Forest Sector - Information Capacity Building Workshop**, 6-8 December 2016 in Budapest, Hungary,
- **East and Southeast Asia Renewable Energy Statistics Training Workshop**, 12-14 December 2016 in Bangkok, Thailand,

Upcoming training activities:

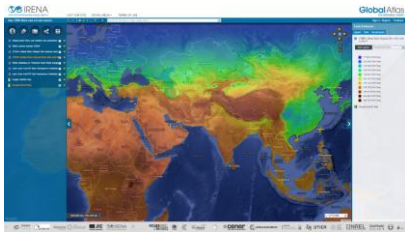
- **Middle East and Horn of Africa Renewable Energy Statistics Training**, February 2017 in Abu Dhabi, UAE.

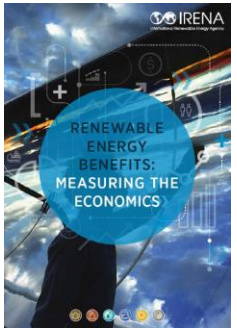
Further developments

- **Trade data:** Solar panels; solar lanterns; solar water heaters; biomass pellets
- **Census data:** Electricity access; clean cooking technologies
- **Estimation techniques:** Using census and household surveys for energy data
- **Energy content:** Examine calorific values

Other IRENA Activities

- **Jobs and socio-economic benefits**
- **Global Atlas**
- **Measuring the benefits**
- **Water-Food-Energy Nexus**





Questions?
Thank you!

REsource

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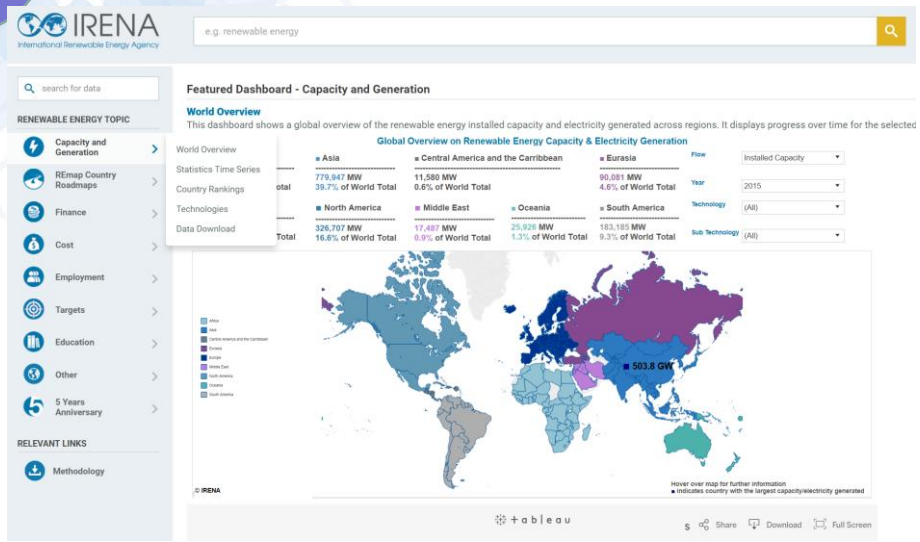
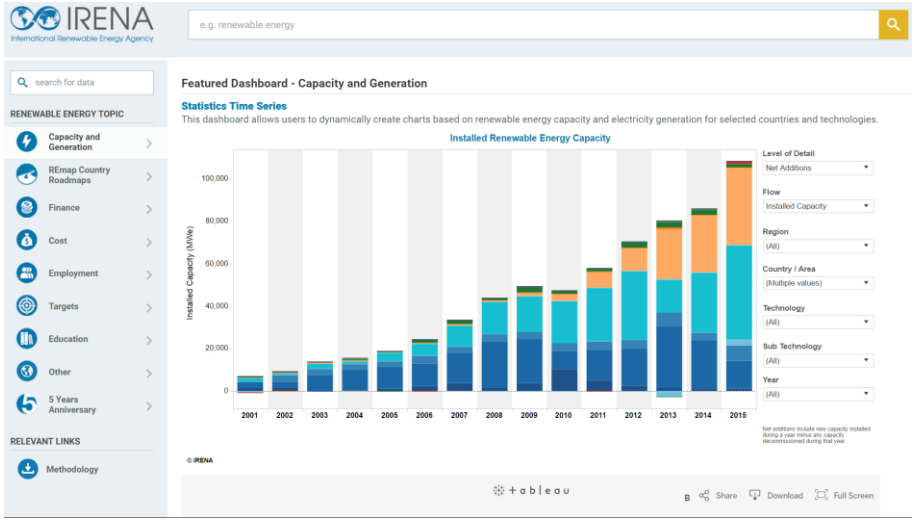
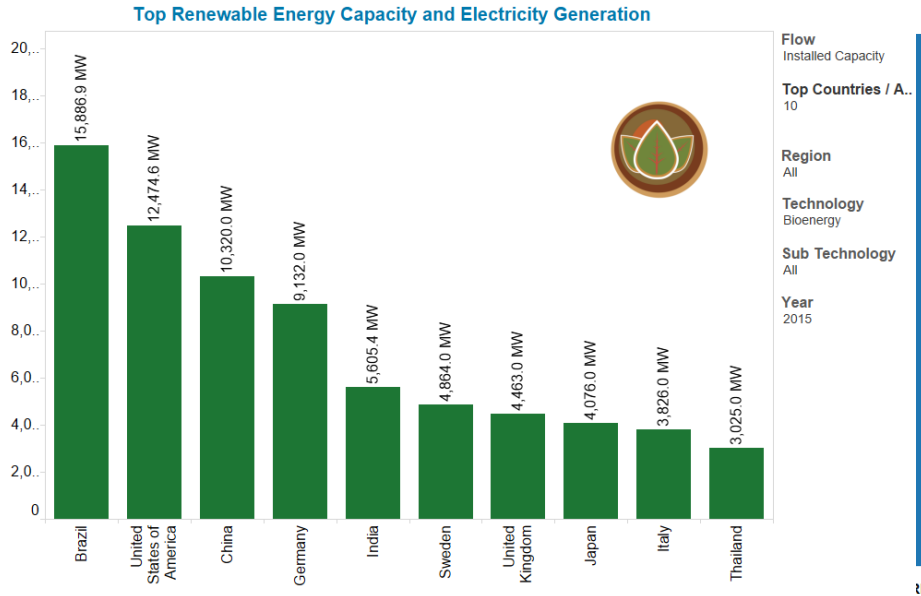
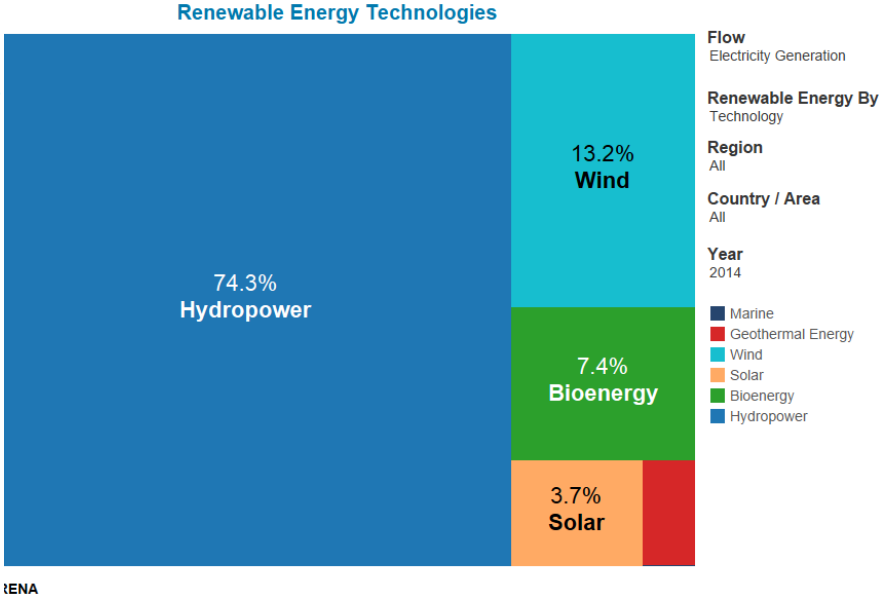




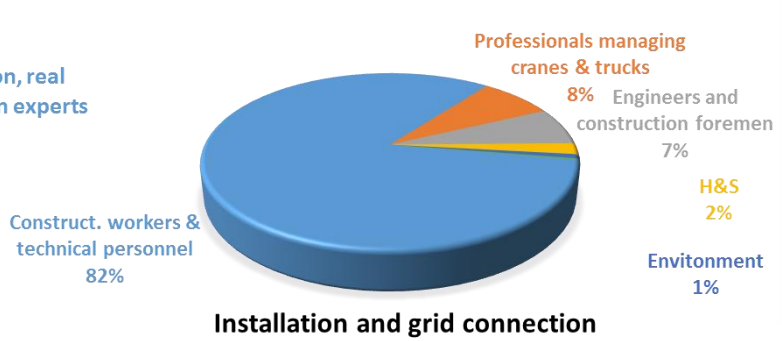




Solar PV value chain: jobs requirements

	Project planning	Manufacturing and procurement	Transport	Installation and Grid connection	Operation and maintenance	Decommissioning
						
Workforce for **50 MW**	**2,100 person-days**	**21,500 person-days**	**3,500 person-days per 1000 miles**	**39,400 person-days**	**20,500 person-days per year**	**5,200 person-days**

Project planning



Installation and grid connection

Capacity	Good Practices
LEGAL AND INSTITUTIONAL FRAMEWORKS	• Develop an institutional framework for data collection and reporting that includes: clear division of roles and responsibilities; coordination mechanisms between key institutions; clear processes and timelines; • Adapt statistical acts to incorporate renewable energy statistics.
WELL-DEFINED DATA REQUIREMENTS	• Define data needs based on national priorities e.g. monitoring of: RE targets; short term market trends; policies; energy access; energy security etc.
SUFFICIENT SKILLED PERSONNEL	• Ensure the lead agency has staff dedicated to the collection of renewable energy data; • Provide renewable energy statistics training for staff and enumerators.
CLEAR METHODOLOGIES AND PROCESSES	• Reporting templates should use internationally agreed definitions and measurement units; • There should be a manual showing all calculations and estimation methods used for the production of RE statistics; • Enumerators should be equipped with guidance on how to collect data or make estimates in the field (including pictures and diagrams); • Changes in historical data, data sources, estimates and other adjustments should be recorded in an archive or statistical working system.
APPROPRIATE DATA COLLECTION MECHANISMS	• The main instruments for collecting RE data are: household surveys; enterprise surveys and administrative data. Given survey costs, options for using existing data collection activities should be explored before starting new data collection exercise; • Design a sample that takes into account characteristics of renewable energy e.g. regional availability of bioenergy resources.
ANALYSIS, REVIEW AND VALIDATION PROCEDURES	• Conduct automated and manual checks to validate data collected (e.g. whether data is complete, internally consistent and realistic); • Data should be peer reviewed prior to publication.
MECHANISMS FOR DATA DISSEMINATION	• Data should be made available to the public in an easily accessible format; • Statistics should be published on a regular schedule with minimal time lag.