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ADB

Overview of IAEA's Capacity Building Programme on Energy Planning and its Integrated Energy Planning Tools

Kee-Yung Nam, Asian Development Bank
Andrii Gritsevskyi, International Atomic Energy Agency

SPOTLIGHT SESSION

Integrated Energy System Planning

ADB IAEA

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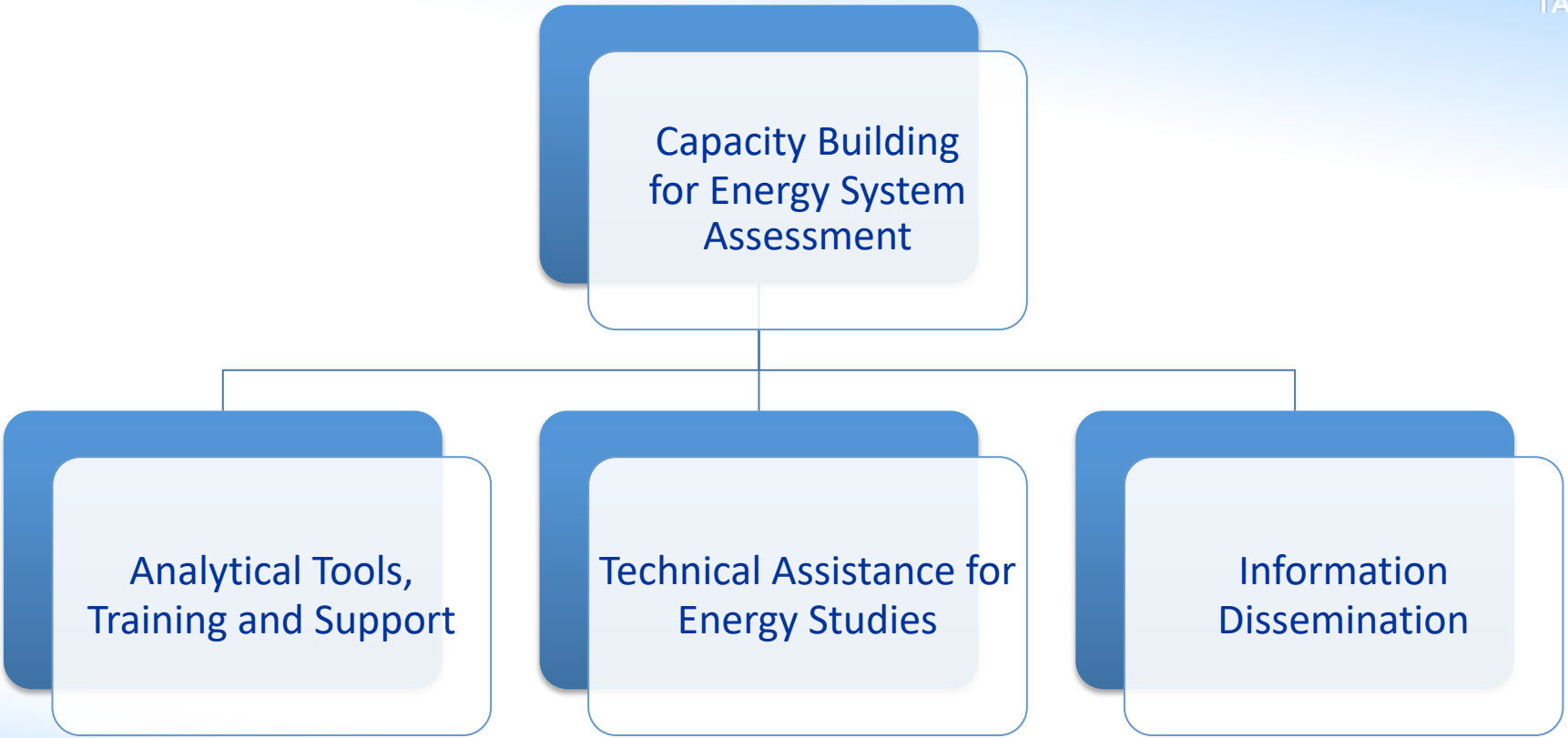
Introduction

IAEA's Capacity Building for Energy Planning

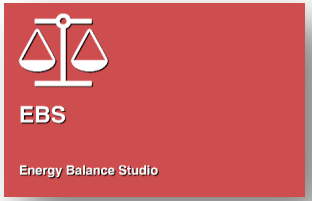
- Energy planning is integral part of policy and investment decision-making in the energy sector
- IAEA has pioneered capacity building activities and has decades of experience in supporting Member States in energy planning
- … supports decision and policy making by assisting Member States to strengthen national capabilities in energy system analysis, so that countries can develop their own sustainable energy strategies

National expertise is essential !


Capacity Building for Energy System Assessment
Analytical Tools, Training and Support
Technical Assistance for Energy Studies
Information Dissemination

Energy System Assessment Tools

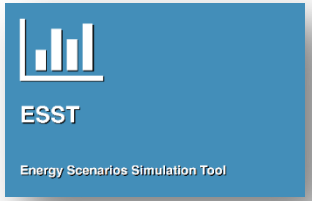
- …distributed to 150+ Member States and 21 Regional & International Organizations



Energy Statistics and Energy Balances Compilation

Energy Demand Analysis and Projections

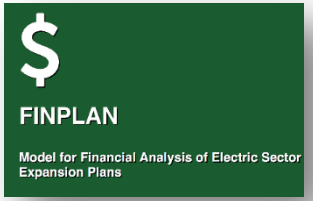
Energy Supply Optimization and Simulation



Energy Scenario Simulation Tool for Fast Estimates

Power Generation Investments and Expansion Planning

Analysis of Power Plants Environmental Impacts



Analysis of Financial Viability of Power Generation Projects

Selected ongoing capacity building projects in energy planning

Recipients: Multidisciplinary national teams composed of experts from energy planning offices at national ministries, specialised agencies, energy utilities and academia

- **Regional European project for Building Capacity** to assess the Role of Low Carbon Energy Technologies for Climate Change Mitigation (26 countries)
- **Regional Latin America and Caribbean Project** for building capacity at national and regional levels to conduct comprehensive sustainable energy development studies (15 countries)
- **Regional project for Caribbean islands** for building local capacity in energy system analysis and planning, including integrated assessment of Climate Land Energy and Water (CLEW) (12 countries)
- **Development of Continental Master Plan** (CMP) **for Africa** (beneficiaries AUDA-NEPAD and five African power pools)
  - IAEA and IRENA as modelling partners
- **National projects** (capacity building in energy system analysis, NDCs support, masterplan support): Eswatini, Guatemala, Nicaragua, Saint Lucia, Botswana, Djibouti, and other..

Sustained national capacity for energy planning

Partners are crucial

- It is not a single organisation effort, but coordinated action
- Summer schools, joint trainings, energy modelling platforms, joint tool development and exchange, improved data accessibility
- Pool of external experts and networks

"Plans are nothing; planning is everything"

- Local expertise is critical
- Energy planning is not a one-time exercise
- Capacity building is a long-term process

2021

770 Participants

194 Females

32 Events

85 Member States

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Motivations and Principles

Capacity Building for Energy System Assessments

- Driven by Member States needs
- Support provided through Technical Cooperation Program
  - Program/project management and financing
  - Cooperation among TC and technical departments – Program Management Officers (PMOs) and Technical Officers (TOs)
- PESS/PCB (inside Department of Nuclear Energy)
  - Responsible for technical implementation of TC projects in Energy Planning
  - Contribute to projects with other main field of activities (nuclear infrastructure, nuclear knowledge management, human resources, water management etc.)
  - Development/maintenance/updates of tools, capacity building and training programs ***and related services***

Core objectives

- Capacity building support and development of related tools/methodologies, **focuses** on **energy demand** and **supply analysis** for the assessment of long-term energy plans and strategies, in support of sustainable development
- **Technical assistance** is provided to national experts from **various institutions**: government ministries and agencies, utilities, regulators, statistics offices, universities/academia and others
- Capacity building aims to ensure that MSs are **capable to independently conduct analysis** of energy demand and supply patterns and options of overall energy system and related sub-systems as a fundamental component of sustainable development, based on realistic assessments of technical feasibility of alternatives and broader implications (incl. financial, economic, environmental and social implications)

Areas of considerations

- Training and support
- Tools and methodologies
- Internal capacity, coordination and cooperation
- External support to program (experts/lecturers/trainers)
- External collaboration
- Documentation and Publications

Tools and methodologies

- Capacity building is organized around a set of own tools covering most of the energy planning process phases
- Tools are not necessarily integrated or firmly connected, allowing flexibility to complement/replace IAEA tools with “external” ones based on country specific needs and requirements
- Development and updates of tools and methodologies should ensure following:
  - Functionality enabling comprehensive energy assessments for analysing the future energy mix, including the role of individual technologies such as nuclear power
  - Harmonised user experience across tools
  - Up-to-date methodologies (compared to alternative tools, including commercially available tools)
  - Up-to-date technical documentation
  - Up-to-date training materials and services (eLearning, User Manuals, Exercises, Assignments…)
  - IT Platform agnostic, available under various OSs to assure future compatibility
  - Accessible through Cloud infrastructure (public or dedicated)
  - Based on “open source” principles (control of the product that is released and used in trainings)

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Thank you!