

Project Preparation in Energy Sector in Nepal

SESSION IV : PROJECT PREPARATION SKILLS

Presented at

Regional Meeting on Sustainable Energy for Asia-Pacific Least Development
Countries

by

Mahesh P. Acharya

22-23 March 2017

Kathmandu

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Energy Sector Overview

Key energy indicator of Nepal:

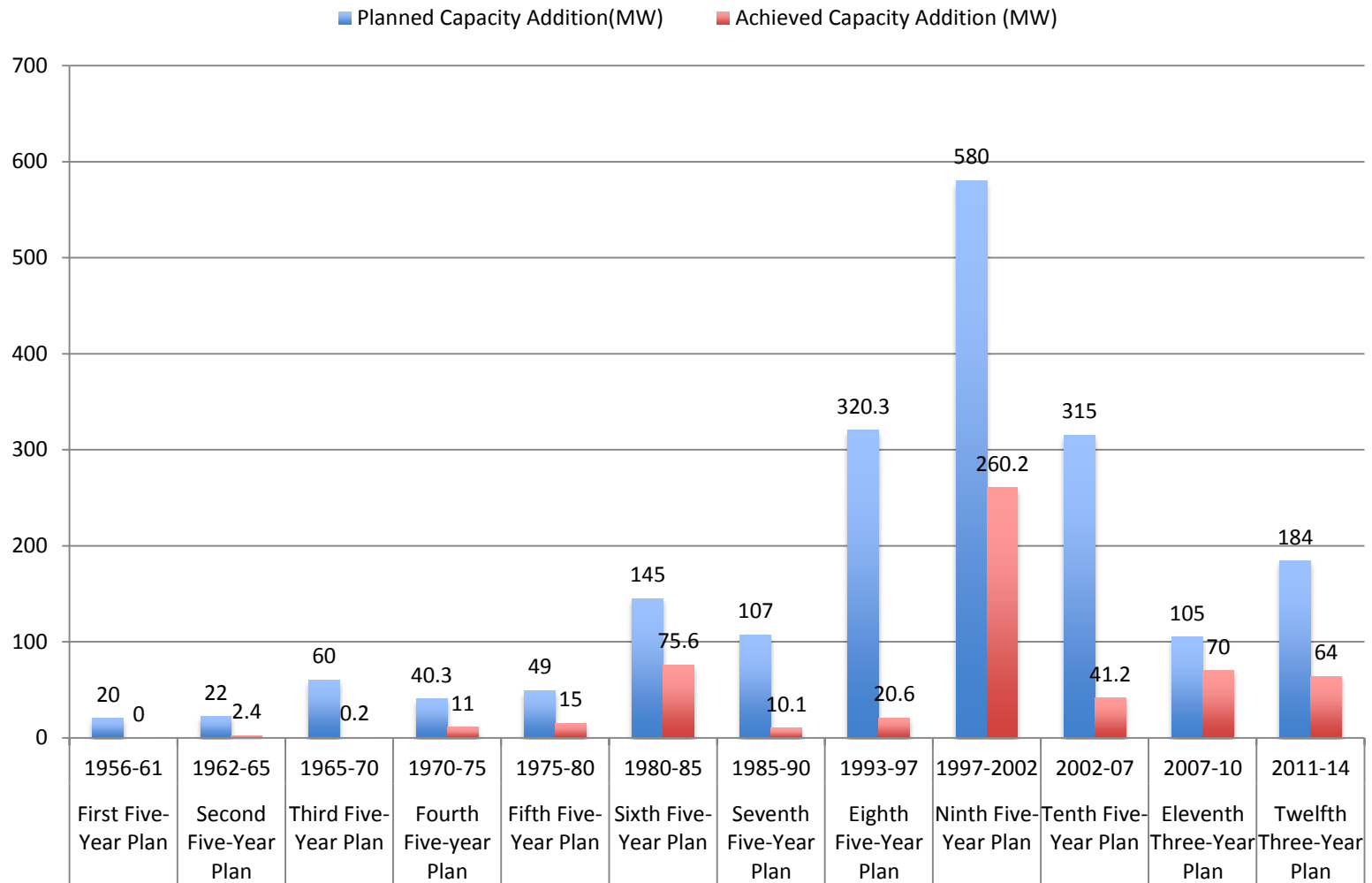
- Electricity consumption per capita: 132 kWh
- Population with electricity access: 76%
- Total installed capacity: ~1000 MW
- Energy consumption mix:
 - Traditional: 80%
 - Petroleum products: 11.3%
 - Electricity: 3.3%
 - Coal: 2.8%
 - Renewable energy: 2.6%

Energy Sector Targets

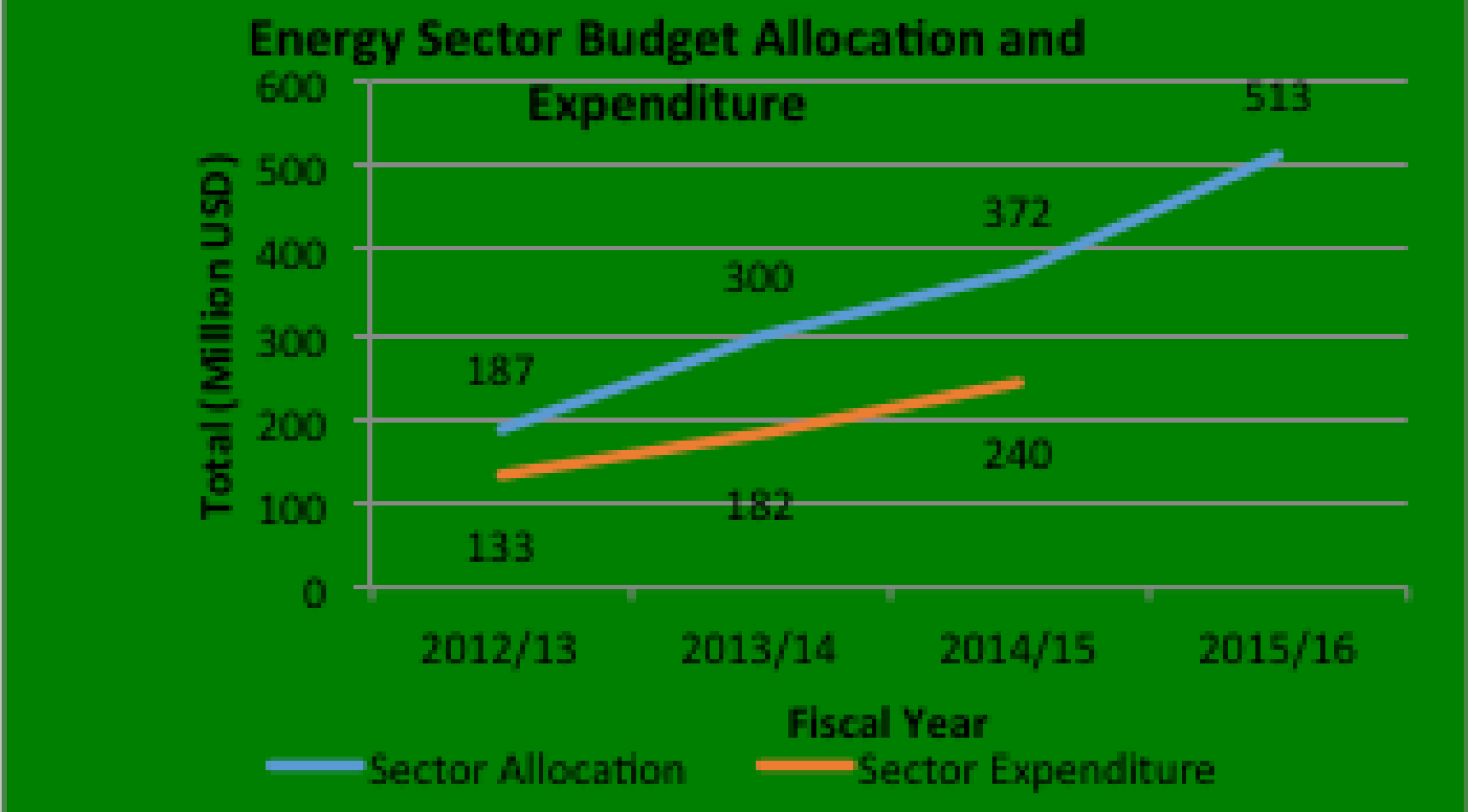
Plan	Targets
Sustainable Development Goals, (2016-2030)	<ul style="list-style-type: none">• 10,000 MW of installed capacity of hydropower by 2030.• Grid access increased to 99% of the population in 2030• Per capital consumption of electricity of increased to 680 kWh in 2030.
Concept Paper on National Energy Crisis Reduction and Electricity Development Decade, 2016	<ul style="list-style-type: none">• 10,000 MW of demand by 2026 (optimistic case) to be met by combination of ROR (~50%) and reservoir plants (50%).

Sources: National Planning Commission, and Ministry of Energy

Planned vs Actual Capacity Addition



Planned vs Actual Expenditure



Investment requirements in various sectors

Investment Requirements 2011-2020 (Nepal)				
Sector	Low		High	
	Billion USD	% of GDP	Billion USD	% of GDP
Transport	3.7	2.32	5.5	3.49
Power	5.3	3.34	7.0	4.46
WSS	1.7	1.08	2.6	1.62
Solid Waste	0.4	0.24	0.5	0.30
Telecom	0.4	0.27	0.6	0.40
Irrigation	1.6	0.99	2.3	1.48
Total	13	8.24	18	11.75

Source: Andres, L., D. Biller, and M. Herrera Dappe (2013). Infrastructure Gap in South Asia: Infrastructure Needs, Prioritization, and Financing. Washington DC : World Bank.

To achieve 10,000 MW in the next decade, investment to the tune of 20-25 billion will be required over that period.

Challenges of Low Level of Investment in Energy Sector

- Absence of focused sector plan, policies and strategies
- Inadequate regulatory frameworks
- Poor implementation capacity in the public sector utility.
 - Inadequate attention to project preparation
 - Lack of sufficient funds for project preparation
 - Lack of sufficient capacity in project management

Challenges of Low Level of Investment in Energy Sector (cont...)

- Lack of knowledge sharing within a sector agency or across sectors, resulting in past knowledge not being transferred to the next project.
- Lack of private sector friendly investment environment to attract investment in large projects.

Project Preparation

- Funds allocated to project preparation is inadequate.
- Most preparatory works are done in a short time after the project has been committed or as part of project loans/financing.
- Inadequate project preparation may result in glossing over the project optimization, the likely social and safeguard issues, poor quality design, inaccurate cost estimates contributing to higher risks during project construction, resulting in time and cost over runs.

Project Preparation (cont..)

Project readiness criteria:

- Project identification
- Project prioritization
- Feasibility study
- Detailed engineering design
- Identification of key environmental and social safeguard issues, and preparation of the management plan
- Land acquisition
- Project risks assessment
- Preparation of costs estimates
- Preparation of economic and financial analyses
- Assessment of the financial structure
- Preparation of procurement documents

Project Bank

- A project bank consisting of projects meeting the project readiness criteria or filters to be prepared.
- The projects are then sequenced for development to meet the demand projection, subject to their meeting the economic and/or financial viability.
- The projects from the project bank may be taken up for implementation by public sector as well as for private sector.

Project Pipeline

- Well prepared projects is most likely to give more comfort to the multilateral or bilateral funding agencies, and private sector investors, as it will cut down the duration of project cycles.
- As all the project-related risks are identified in advance, it will be easier to prepare necessary strategy and action plan for their mitigation.
- Cost and time overrun will be minimized.

Monitoring and Evaluation

- In a well prepared project, realistic project milestones can be established, with higher likelihood of being achieved. As a result, this will
 - help setting up realistic indicators as part of the project monitoring framework, and
 - in turn help putting in place an effective project management system.

Capacity development in project preparation and implementation

- Setting up of specialized departments within the energy sector agencies responsible for project preparation and implementation.
- Such departments will be responsible for (i) project identification; (ii) feasibility study; (ii) engineering design; (iii) land acquisition and environmental and social safeguard related activities,
- Capacity in the following areas need to be enhanced:
 - Engineering
 - Environmental and social safeguard
 - Economic analysis and finance
 - Project Management .

Concussion

To enhance project implementation capacity the required steps to taken by the government are:

- Allocation of sufficient fund for project preparation
- Preparation of a project pipeline of well prepared projects, and
- Capacity development within the sector agencies.

Thank You