Updates on Energy Sector Strategy and Work Plan

Presentation to SOM

Islamabad, Pakistan
25-26 October 2016

F. C. Kawawaki
Director
Energy Division
Central and West Asia Department, ADB

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Long-term vision

- Energy security through the balanced development of the region's energy resources, infrastructure, and institutions
- Stronger integration of the region's energy markets
- Economic growth through energy trade

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Strategies

- Sound domestic and cross-border investment measures
- Capacity building and knowledge sharing
- Policy support to attract investments

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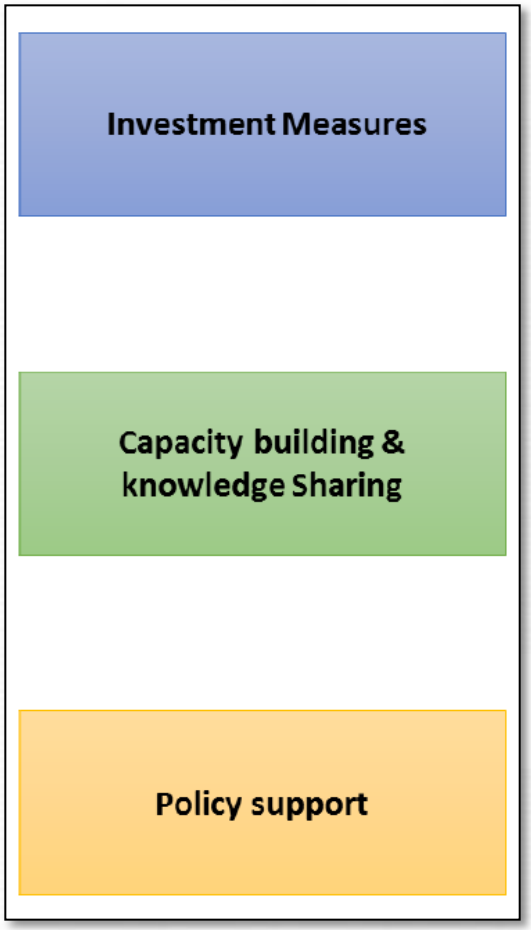
Strategic Components, Thematic Priorities and EWP Elements

Energy Strategy 2020



Thematic Priorities

- Develop and invest in priority projects
- Develop sustainable energy resources
- Develop capacity, knowledge and demonstration of technology in:
  - Energy trade
  - Clean energy
  - New technology
  - Climate change mitigation
- Establish robust legal and regulatory framework for private investments, esp. in clean energy technologies
- Support cross-border energy trade

EWP Elements: 2016-2020

1. Developing E-CASAREM
2. Promoting regional electricity trade and harmonization
3. Managing energy-water linkages
4. Mobilizing financing for priority projects
5. Capacity development & knowledge management
6. Promoting and prioritizing clean energy technologies

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E-CASAREM Projects Milestone
(CASA 1000)

1

Launched on 12 May 2016 in Dushanbe, Tajikistan

Expected Project Completion moved to 2020 from 2018

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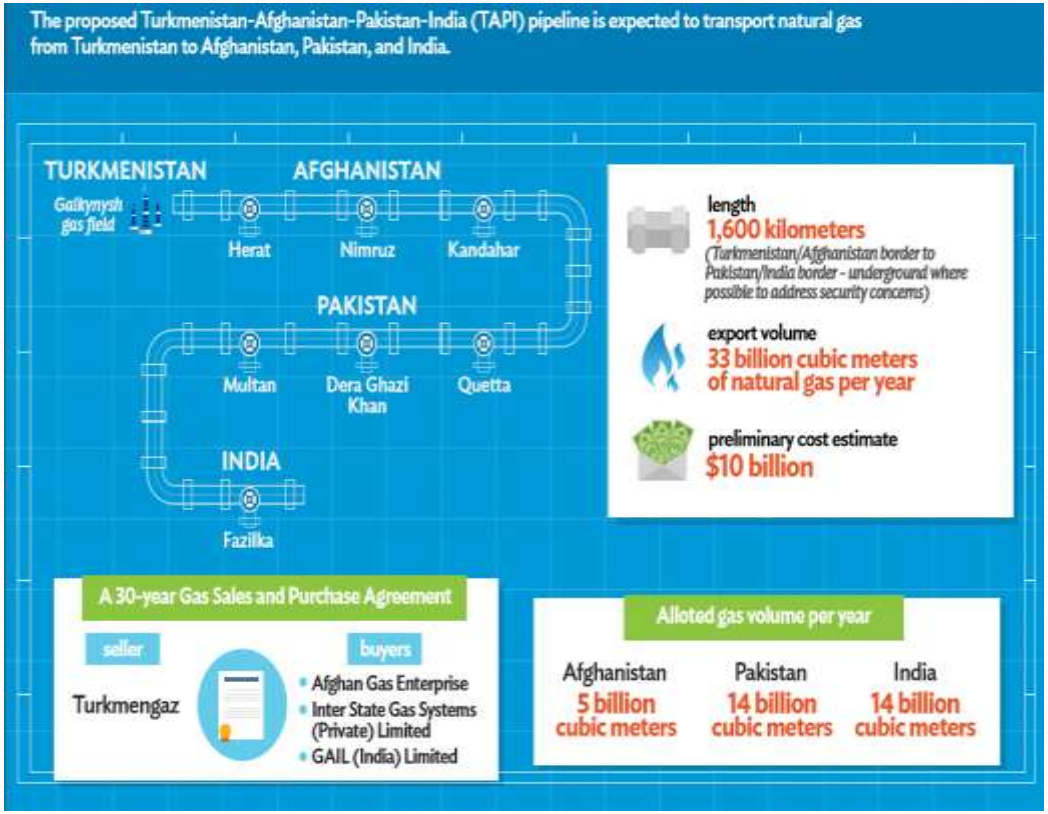
E-CASAREM Projects Milestone
(TAPI)

1

- Turkmengas was selected as consortium leader on August 2015
- Shareholder's Agreement was signed on December 2015
- Investment Agreement was signed on April 2016



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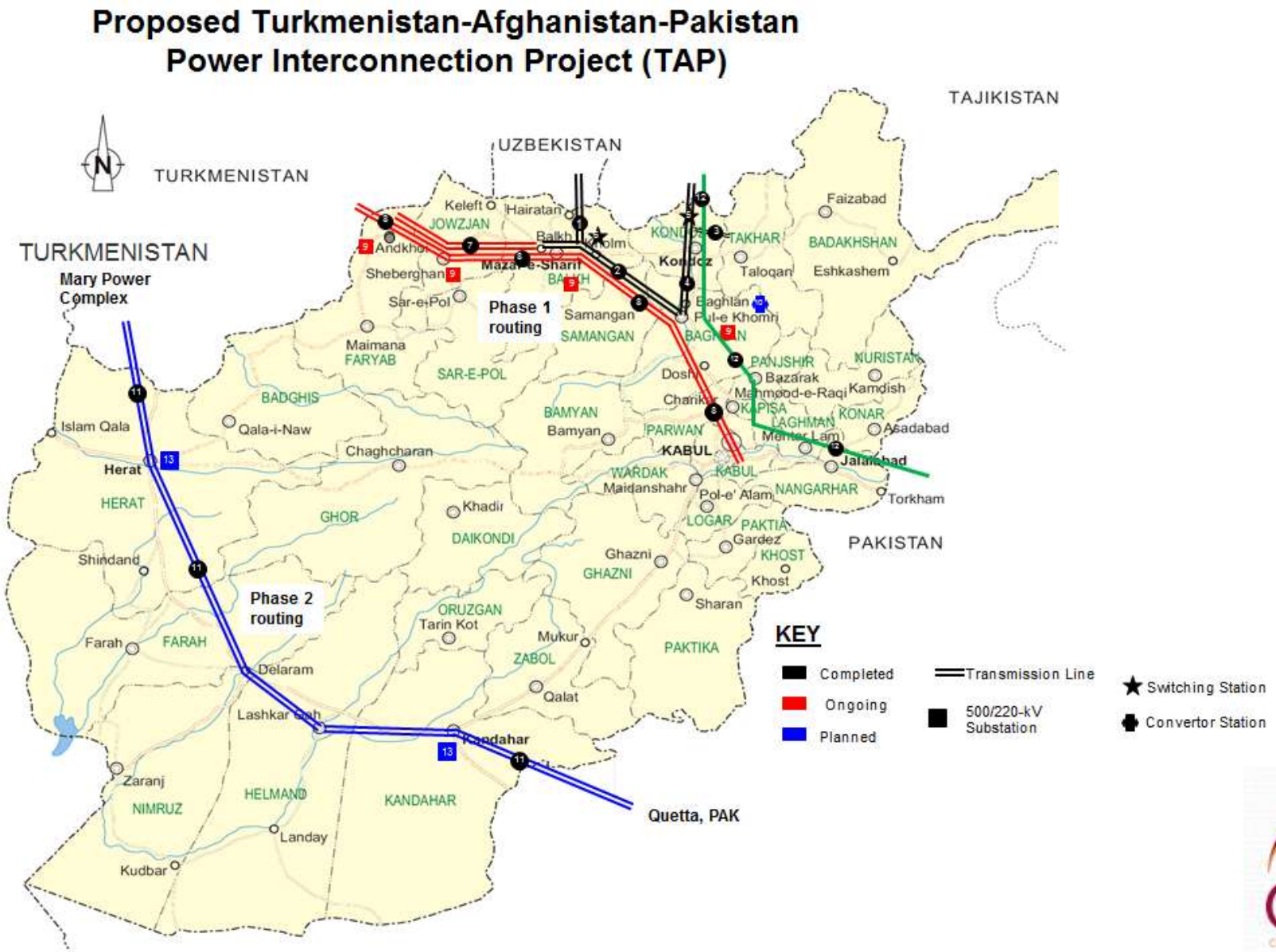
New TUTAP Component



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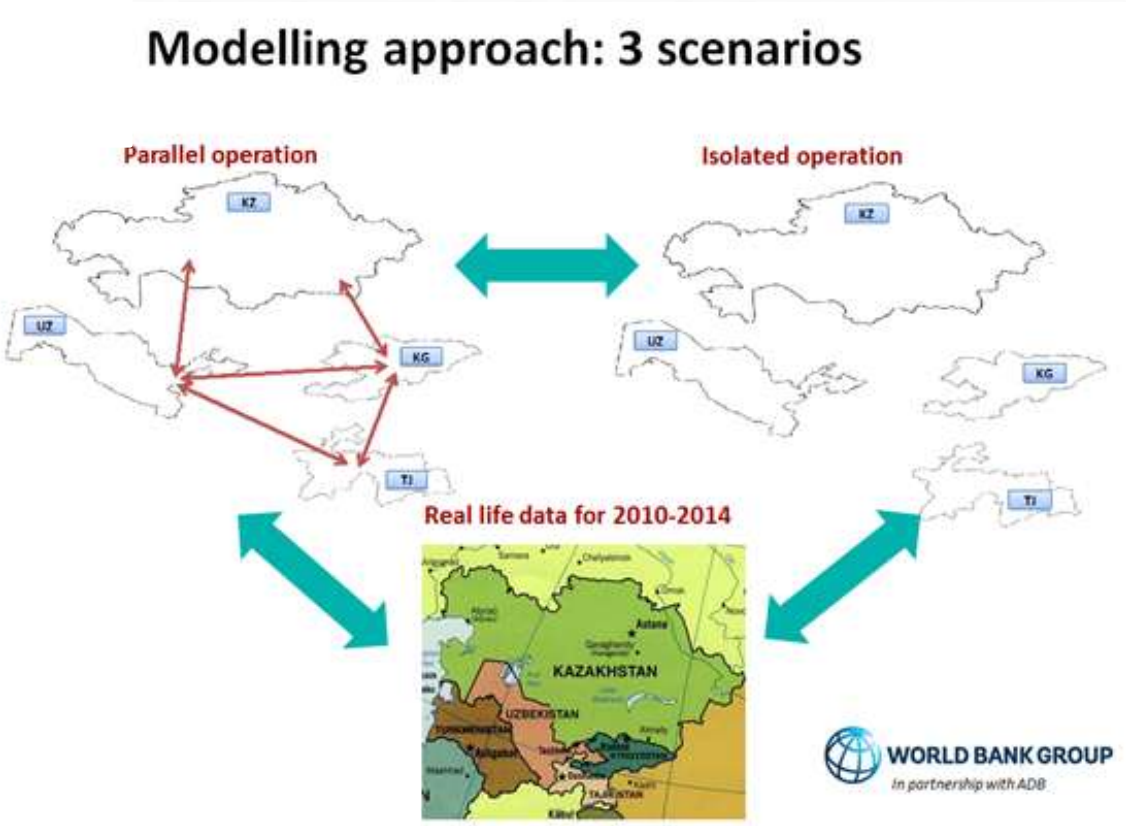
Enhancing Regional Power Trade in Central Asia

Objective:

Quantify opportunity lost (2010 to 2014), for each country because of low trade:

- Reduced water spillages
- Reduced OPEX
- **Reduced costs of imported ancillary services** (full use of regulating hydropower in Tajikistan and Kyrgyzstan)
- **Reduced requirements** for reserve Different time zones
- Reduced **un-served demand**



- Recommendation for increasing power trade

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Enhancing Regional Power Trade in Central Asia

Study Findings

- **$6.4 billion** missed benefits (2010-2014)
- **Low trade is economically hurting** (Kyrgyz Republic, Kazakhstan, Tajikistan and Uzbekistan)
- **Only about 2,500 GWh traded** now; 25,000 GWh (1990s)

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Managing Energy-Water Linkages

During the 21st ESCC, members:

- Agreed to build capacities to tackle "Climate Change" in future strategy and work plan
- Decided to explore simulation models to create climate impact map for the region
- Understand mitigation and adaptation training programs to meet each countries commitment for the Intended Nationally Determined contributions (INDCs) in Paris

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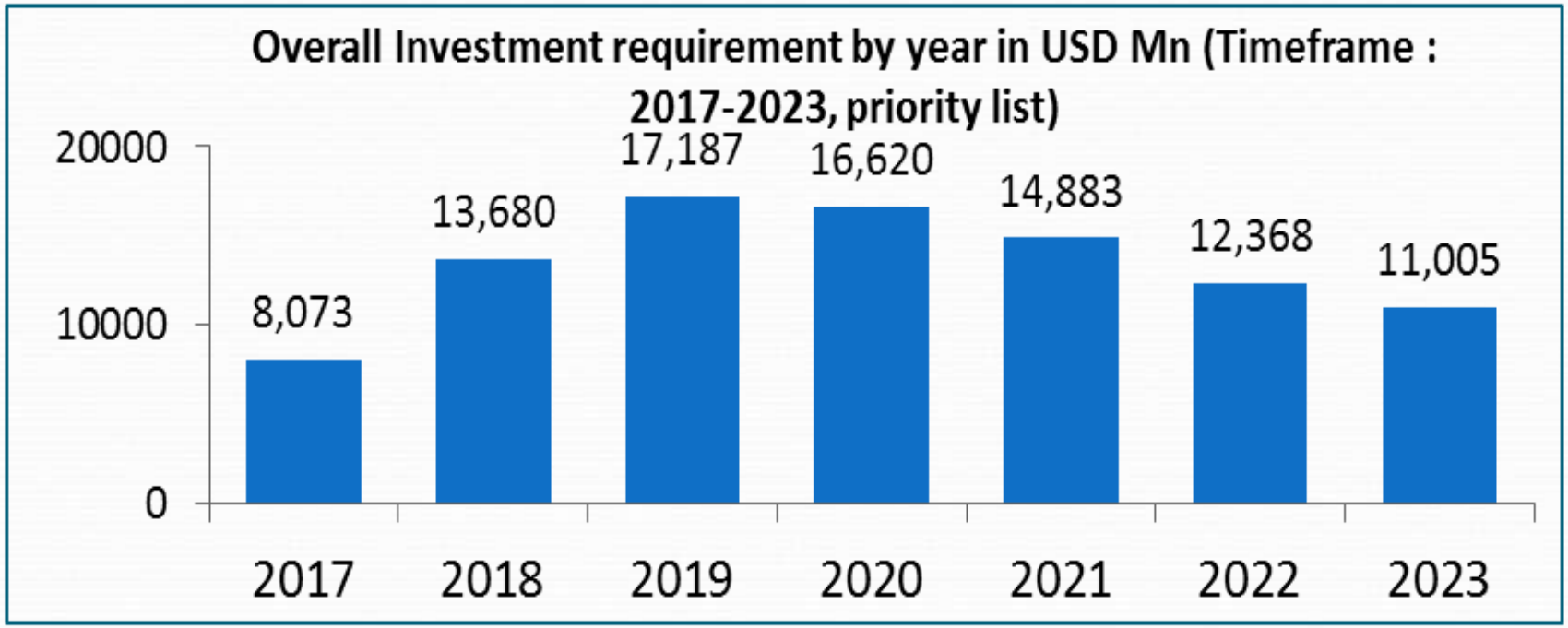
Investments: Priority Projects



- **$100 billion** between 2017 and 2023

Capacity Building and Knowledge Management
(2016-2020)

5

Knowledge sharing: smart meters, project management, independent regulation, tariff policy, forecasting, planning and energy efficiency

Technology adoption: smart meters, solar power, battery based storage, electric vehicles and energy efficiency

Regulatory issues: framework for independent regulation, tariff setting for time-of-use tariffs, pre-paid meters, IPP tariffs and benchmarking

Training: demand management, forecasting, solar power, battery storage, energy efficiency and management of large projects

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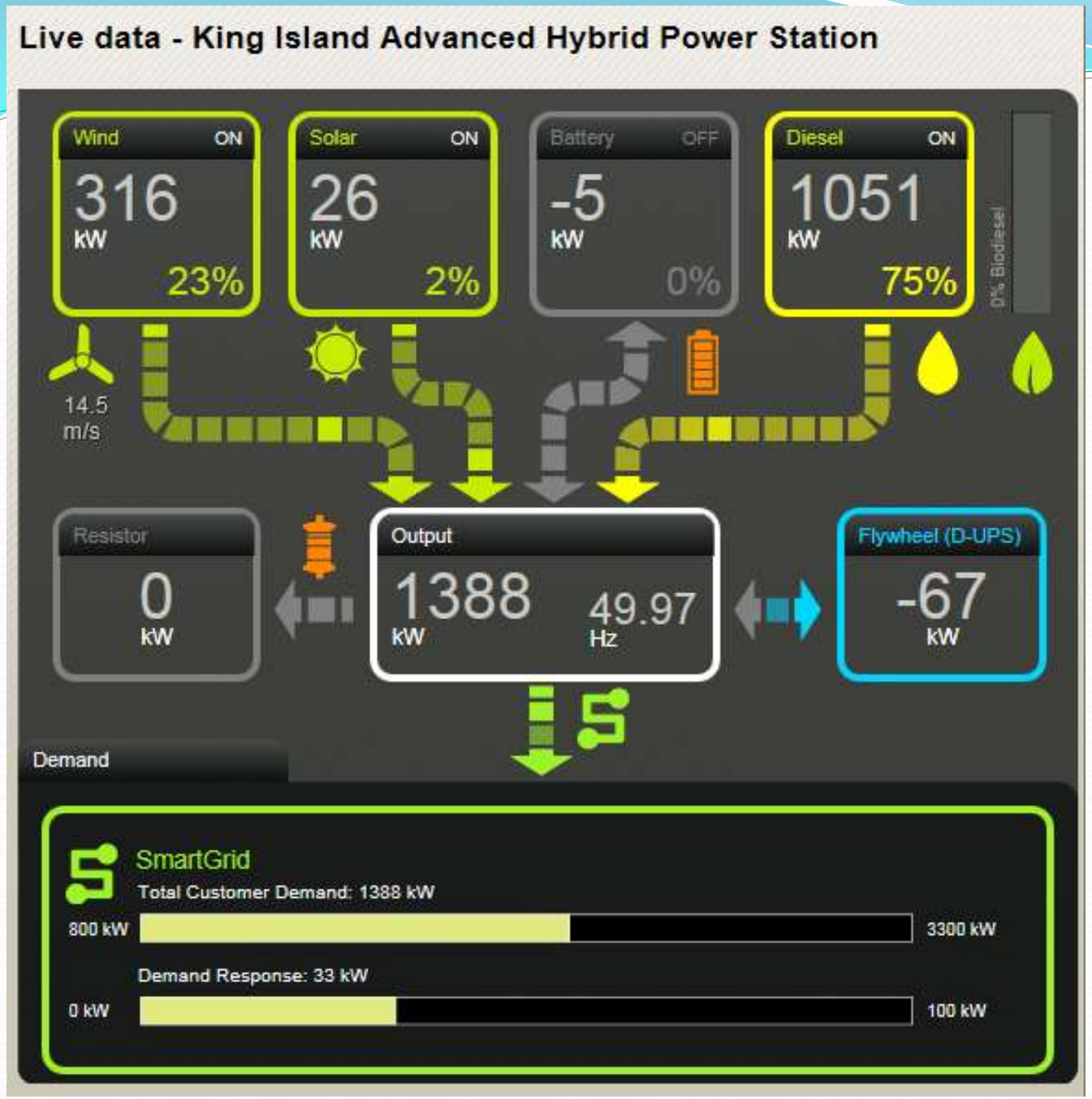

Next Training

In partnership with Hydro Tasmania, Australia

21-24

November 2016

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Prioritizing Clean Energy technologies

Project Number: 49412-001
Regional Capacity Development Technical Assistance (R-CDTA)
August 2016

Access to Electricity with New Off-Grid Solar Technology in Central Asia

Financed by the Clean Energy Fund under the Clean Energy Financing Partnership Facility

Off-grid DC solar kits for as little as $1,200?

Published on Friday, 14 October 2016

The answer is yes – off-grid is the future, and the only way to bring electricity to all by 2020.

Off-grid solar can be game-changer for electricity access in Central Asia

Published on Thursday, 22 September 2016

ADB recently approved new funding to demonstrate the technical and financial viability of this new technology combination in the CAREC region.

$2 million grant
approved
in August 2016

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Prioritizing Clean Energy technologies

Project Number: 49413-001
Regional Capacity Development Technical Assistance (R-CDTA)
27 September 2016

Leapfrogging of Clean Technology in CAREC Countries through Market Transformation

$4 million grant
concept approved
in September 2016

Leapfrog into technology to avoid getting leapfrogged yourself

Published on Friday, 29 July 2016

Those that still question the need for technology leapfrogging in development need to know if we continue to use camel-era technology on the highway, we may get hit by fast cars that have embraced innovation.

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Prioritizing Clean Energy technologies

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Proposed Investment Projects by Each Country

(Based on brainstorming session on 29 July in Tokyo and updated on 9 September in KL)

Project No.		AFG	AZE	KAZ	KGZ	MON	PAK	TAJ	TKM	UZB
	A. Supply Side									
1	Solar powered micro-grid for remote areas	✓			✓			✓		
2	Adoption of clean coal technologies in power generation			✓		✓	✓			
3	Improve efficiency of solar industry / establish new industry					✓			✓	
4	Solar off-grid to reduce demand from diesel	✓			✓	✓	✓	✓		
5	Recycling of municipal waste for power generation	✓		✓			✓	✓		✓
	B. Electric Vehicle and Storage									
6	Battery based grid storage for reliability improvement of renewable energy			✓		✓		✓		✓
7	Electric vehicles (bus, cars, motorcycles and scooters) pilot for government fleet and public transport	✓	✓	✓			✓	✓	✓	✓
	C. Demand Side and Distribution Efficiency									
8	Demand responses through smart meters and diversified tariffs									✓
9	LEDs for public lighting and offices	✓	✓		✓		✓			
10	Efficiency in distribution efficiency and loss reduction			✓	✓		✓	✓		✓
11	Improve load dispatch systems and distribution control with SCADA	✓			✓	✓		✓		✓
12	Reduce heat losses in office buildings by retrofitting				✓	✓				

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✓ Proposed in Tokyo on 29 July 2015 and confirmed in KL on 9 September 2015 (AZE and TKM did not participate)

✓ Proposed on 9 September 2015 in KL; For AZE and TKM, proposed in Tokyo on 29 July 2015

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	B. Electric Vehicle and Storage									
7	Electric vehicles (bus, cars, motorcycles and scooters) pilot for government fleet and public transport	✓	✓	✓			✓	✓	✓	✓
	Electric bus	✓		✓			✓	✓		✓
	Electric cars	✓		✓			✓	✓		✓
	Electric motorcycles							✓		
	Electric scooters							✓		

✓ Proposed in Tokyo on 29 July 2015 and confirmed in KL on 9 September 2015 (AZE and TKM did not participate in KL)

✓ Additional information provided on 9 September 2015 in KL; For AZE and TKM, proposed in Tokyo on 29 July 2015

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Leapfrogging…

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