PAGE 4: B.1) YOUR CASE STORY: TITLE AND DESCRIPTION

Q1: TITLE OF CASE STORY

Cambodia: Greater Mekong Subregion Transmission Project

Q2: CASE STORY ABSTRACT

This project developed the power grid infrastructure in the Greater Mekong Subregion (GMS) and consisted of the installation of a transmission line from the Vietnamese border to Phnom Penh. This would enable Electricité du Cambodge (EDC) to import up to 200 MW of power from Viet Nam for supply to Phnom Penh and to facilitate access to electricity for 50,000 households situated in nearby rural areas. It provided Cambodia with a more reliable, lower-cost supply of electricity, increasing Cambodia's electrification rate and supporting growth in trade and investment. The project benefited Viet Nam by providing a means for exporting power as well as Cambodia by supplying power to Cambodia at a cost lower than that for any alternative solution. The project was co-financed by the World Bank and the Nordic Development Fund.

Q3: LONG DESCRIPTION OF THE CASE STORY

Since 1992, the Asian Development Bank (ADB) has been playing a leading role in fostering cooperation in the Greater Mekong Subregion (GMS), including in the electric power subsector. Subregional electricity trade based on interconnected electric power networks had been identified as an approach that could provide significant economic and environmental benefits for individual countries and for the subregion as a whole. On 3 November 2002, Cambodia and other GMS members signed the Intergovernmental Agreement on Regional Power Trade in the GMS.

In 2003, Cambodia’s electricity supply system was rather fragmented and inefficient with the country being served by numerous small-sized generating units with capacities of less than 5 megawatts (MW) due to smaller load centers and fueled by expensive light diesel or by heavy fuel oil. Cambodia lacked a proper system grid and the smaller systems were operating independently. The electricity suppliers including Electricité du Cambodge (EDC) and private sector operators passed on the high operating costs to electricity consumers via the tariff and struggled to meet rapid growth in demand. Electricité du Cambodge (EDC) supplied Phnom Penh, but at a higher cost with an average tariff of $0.15 per kilowatt-hour (kWh). The tariff was high because the power system was small, fuel cost was high, the cost of power purchased from independent power producers was high, and system losses averaged 14%. Private enterprises preferred high cost diesel-powered generators simply because they offered greater reliability. In provincial towns where EDC operated power systems, tariffs ranged from $0.20 to $0.30 per kWh. In other provincial towns, the average tariff was $0.53 per kWh. In villages and rural areas, the cost of electricity often exceeded $1 per kWh. The national electrification ratio was estimated at only about 15%. The high cost of electricity was one of the main obstacles to economic growth in Cambodia. High tariffs, in turn, were negatively impacting Cambodia’s competitiveness and constituted a barrier to economic growth.

The GMS Transmission Project, the first GMS energy project in Cambodia, was formulated to take advantage of opportunities to address Cambodia’s power supply issues by establishing a high-voltage interconnection

of opportunities to address Cambodia's power supply issues by establishing a high voltage interconnection with Viet Nam. At the time, the electricity cost from EDC's own generation or from the independent power producers, which ranged from $0.11 to $0.13/ kilowatt-hour (kWh), was much higher than that of about $0.6 to 0.625/kWh at which EDC could purchase from Viet Nam. Subregional electricity trade was expected to provide significant economic and environmental benefits to individual countries and to the subregion. Power trade would reduce GMS members' national investments in power reserves to meet peak demand, supply a reliable source of electricity, reduce operating costs, lower emissions of greenhouse gases and other pollutants, and increase consumers' access to the cheapest sources of electricity in the subregion.

The project was appraised from 30 September to 8 October 2003 and planned for the construction of 109 kilometers (km) of 230 kilovolt (kV) transmission line together with associated substations and distribution facilities. This would enable EDC to import up to 200 MW of power from Viet Nam for supply to Phnom Penh and to facilitate access to electricity for 50,000 households situated in nearby rural areas. The major components of the project were (i) 109 km of 230 kV double-circuit transmission line, (ii) substations at Takeo and at West Phnom Penh, (iii) 115 kV grid substation systems in Phnom Penh and a national control center, (iv) a 22 kV bulk supply distribution system to supply villages along the high-voltage transmission line corridor, and (v) capacity building for staff of EDC and Electricity Authority of Cambodia (EAC). The project benefited Viet Nam by providing a means for exporting power as well as Cambodia by supplying power to Cambodia at a cost lower than that for any alternative solution.

The project was implemented by EDC from 2004 to 2010. The project was co-financed by ADB, the World Bank and the Nordic Development Fund (NDF) in addition to government funds. The total project cost was $76 million, of which ADB financed $38.9 million, the World Bank financed $15.53 million, the NDF $12.9 million, and EDC and government of Cambodia contributed $8.9 million.

The project ultimately benefited more than 50,000 rural households in areas where the majority of residents were rice farmers living below the national poverty line. Furthermore, the project contributed to an increase of the national electrification ratio from 15% of the population at the time of appraisal in 2003 to approximately 35% in 2012 when power demand was growing annually at around 20%. The country lacked the generating capacity to meet the growing demand and power imports helped to address not only the shortfall but also replace some of the costly diesel-fired power generation. By the end of 2013, the power purchase tariff for electricity supplied from Viet Nam had dropped to $0.0921/kWh as compared to $0.15/kWh before the project thereby allowing EDC to allocate more budget for grid expansion into the rural areas. Viet Nam continued to supply about 40% of Cambodia's electricity requirements in 2013. The project proved that economic benefits from interregional linkages can be substantial. Viet Nam earned export income from sale of surplus electricity and Cambodia made exceptional economic returns on its investment. However, the largest impact was the increased supply of electricity to people and businesses within Phnom Penh. The EDC was able to connect 40,000 new customers within Phnom Penh, with the increased electrification at lower, reliable costs contributing to reduced costs for merchandise goods, new registered businesses almost doubling from 2004-2009, and overall improvements in Cambodia's Logistics Performance Index particularly in Infrastructure.

Q4: Please add here web links to project/programme materials.

Project Overview: http://adb.org/projects/details?proj_id=34390-013&page=overview

Project Completion Report (2012): http://www.adb.org/projects/documents/greater-mekong-subregion-transmission-project-pcr

Evaluation Report (2014): http://www.adb.org/documents/cambodia-greater-mekong-subregion-transmission-project

Feature article: http://www.adb.org/news/features/cross-border-energy-trade-powers-development-cambodia

Video: http://www.adb.org/news/videos/road-and-electricity-infrastructure-work-stimulates-cambodias-economic-growth

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Q5: YOUR CONTACT DETAILS	
Name:	Pinsuda Alexander
Ministry/Institution/Organization:	Asian Development Bank
Country:	Philippines
Email Address:	palexander@adb.org
Q6: FUNCTION	Other (please specify) multilateral development bank
Q7: FUNDING PARTNER Tick the appropriate box(es)	Multilateral organization

Q8: Additional information

The total project cost was $76 million, of which ADB financed $38.9 million, the World Bank financed $15.53 million, the NDF $12.9 million, and EDC and government of Cambodia contributed $8.9 million.

Q9: START DATE OF PROJECT/PROGRAMME	September 2003
Q10: STATUS OF PROJECT/PROGRAMME	Fully implemented
Q11: DURATION OR, IF ON-GOING, EXPECTED DURATION OF PROJECT/PROGRAMME	More than 5 years
Q12: COST OF PROJECT/PROGRAMME	More than US$20 million

Q13: Additional information

The total project cost was $76 million, of which ADB financed $38.9 million, the World Bank financed $15.53 million, the NDF $12.9 million, and EDC and government of Cambodia contributed $8.9 million.

Q14: TYPE OF FUNDING FOR PROJECT/PROGRAMME	Loan

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Q15: PROJECT/PROGRAMME TYPE	Multi-country (i.e. 2 or more countries)

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Q16: SINGLE COUNTRY/CUSTOMS TERRITORY	*Respondent skipped this question*

PAGE 8: C.2) ABOUT THE CASE STORY

Q17: REGION(If the region does not appear in the drop down menu, please enter manually.)	*Respondent skipped this question*

PAGE 9: C.2) ABOUT THE CASE STORY

Q18: MULTI-COUNTRY(Enter all countries or customs territories)

Cambodia
Viet Nam
Greater Mekong Subregion

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Q19: CASE STORY FOCUSTick the appropriate box(es)	REDUCING TRADE COSTS FOR MERCHANDISE GOODS , Upgrading network infrastructure (ICT, power, telecoms) , Other (please specify) The project to connected new electric power customers within Phnom Penh and contributed to the national electrification rate increasing from 15% in 2003 to 35% in 2012.

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Q20: HOW SUCCESSFUL WAS THE PROJECT/PROGRAMME Tick the appropriate box(es)	Successful

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Q21: WHAT WERE THE OUTPUTS OF THE PROJECT/PROGRAMME Tick the appropriate box(es)	New network infrastructure (e.g. broadband), Other (please specify) New power grid infrastructure

Q22: Additional information(maximum 300 words)

The project consisted of a power transmission line which connected new electric power customers within rural Cambodia and Phnom Penh and contributed to the national electrification rate increasing from 15% in 2003 to 35% in 2012.

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Q23: WHAT WERE THE OUTCOMES OF YOUR PROJECT/PROGRAMMETick the appropriate box(es)	Other (please specify) Improved electrification ratio

Q24: Additional information(maximum 300 words)

The project consisted of a power transmission line which connected new electric power customers within rural Cambodia and Phnom Penh and contributed to the national electrification rate increasing from 15% in 2003 to 35% in 2012.

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Q25: WHAT WERE THE IMPACTS OF THE PROJECT/PROGRAMMETick the appropriate box(es)	Increase in foreign investment, Increase in per capita income, Other (please specify) Increased business registration

Q26: Additional information(maximum 300 words)

The EDC was able to connect 40,000 new customers within Phnom Penh, with the increased electrification at lower, reliable costs contributing to reduced costs for merchandise goods, new registered businesses almost doubling from 2004-2009, and overall improvements in Cambodia’s Logistics Performance Index particularly in Infrastructure.

PAGE 15: C.9) ABOUT THE CASE STORY

Q27: LESSONS LEARNT Tick the appropriate box(es)	Other (please specify) Benefits of regional cooperation

Q28: Additional information(maximum 300 words)

The project proved that economic benefits from interregional linkages can be substantial. Viet Nam earned export income from sale of surplus electricity and Cambodia made exceptional economic returns on its investment.

Q29: PROJECT OR PROGRAMME MONITORING AND EVALUATION FRAMEWORK Tick the appropriate box(es)	M&E framework used, Ex post evaluation