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USAID CLEAN POWER ASIA

Presentation and Discussion on REZ Scope, Vision Statement, Roles, and Process design

January 7, 2019





USAID CLEAN POWER ASIA

Agenda

- REZ Scope
- vision statement
- Organizational structure and roles
- Process design for REZ process

Preparing for designating RE zones

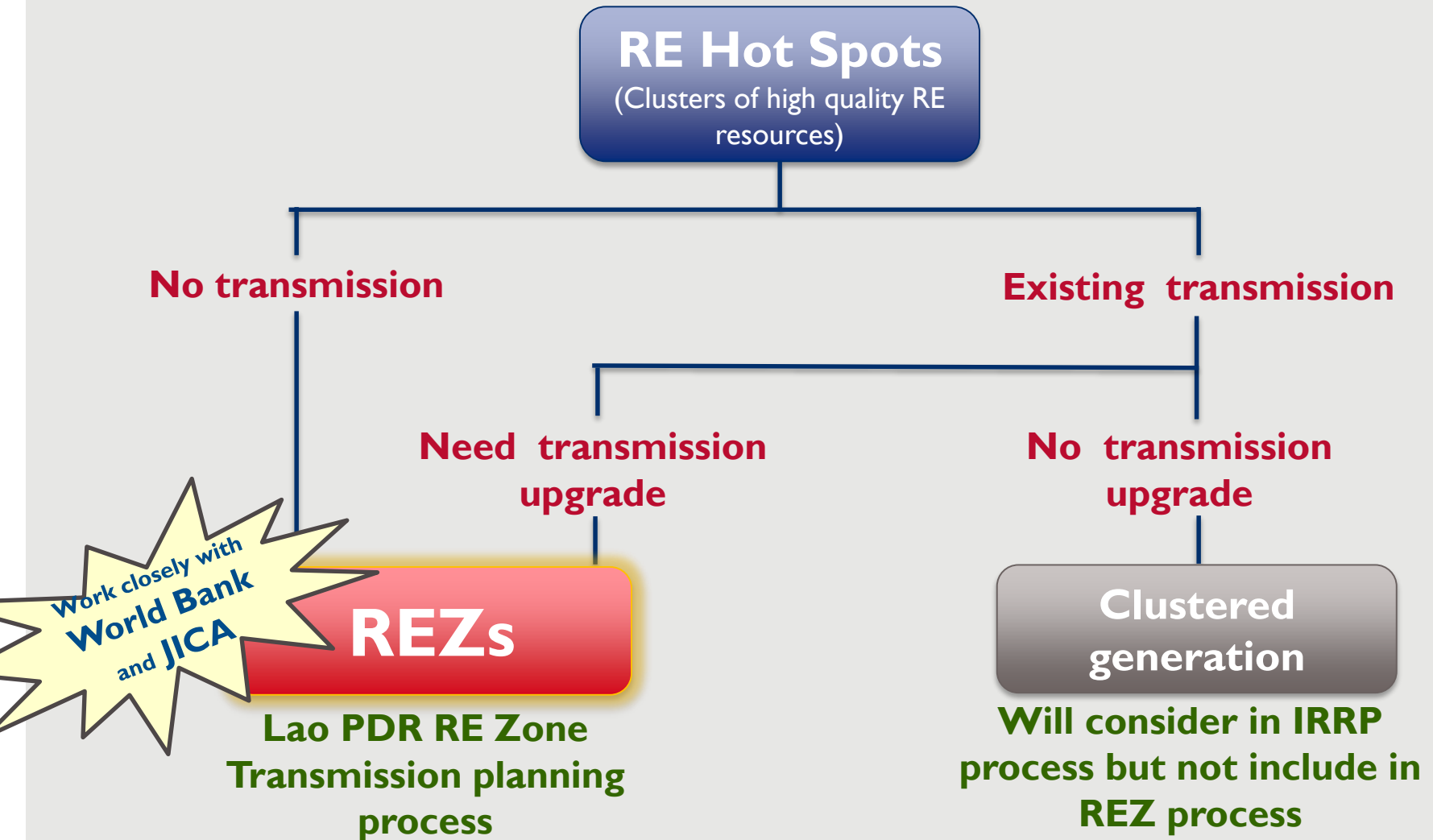
- Scope
- Vision statement
- Organizational structure
- Roles of MEM
- Detailed process design

Scope of REZ

The scope of the REZ process includes implementing a **nationwide REZ transmission planning process**, covering these following RE resources: **solar, wind**, and other appropriate RE resources*

*While the initial assessment by SEI included wind, solar and small hydro, hydro resources are usually too dispersed for the cost of developing an RE Zone.

RE Hot Spots, REZs, Clustered Generation



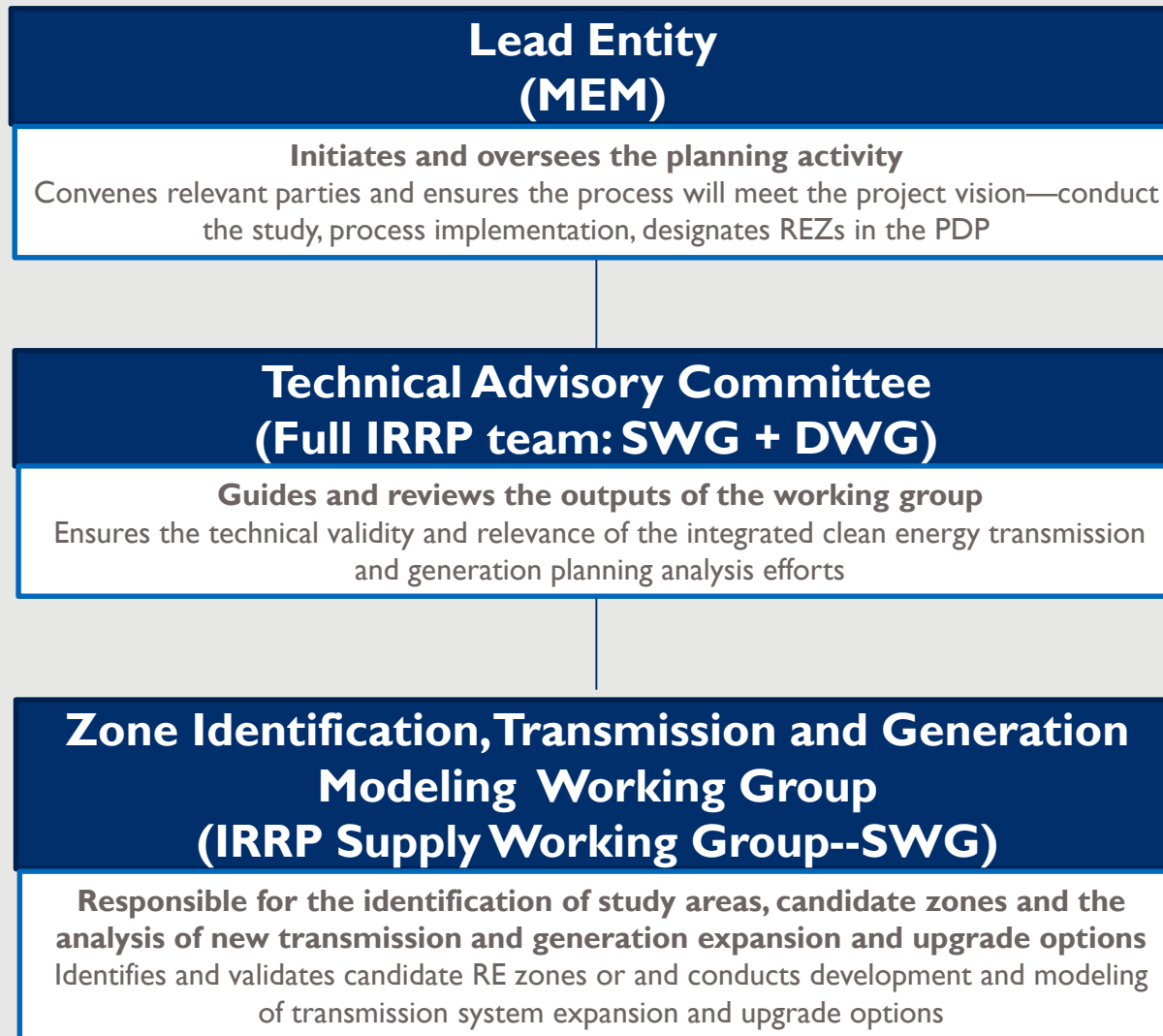
Vision Statement

Ministry of Energy and Mines in collaboration with USAID Clean Power Asia:

- shall **conduct a study on REZ throughout the country** in areas in which RE resources and suitable land areas are sufficient to develop generating capacity from RE technologies; **nevertheless, the study areas either require the building of new transmission infrastructure or significant transmission upgrades***. The study will consist of, but will not be limited to, technical RE potential analysis, economic feasibility analysis, and developing supply curves of each area;
- shall **implement a REZ transmission planning process along with the IRRP supply analysis** to consider designating REZs based on the “least regrets” pathways analysis.
- shall **designate REZs to be included in the final transmission plan in the national PDP** if they are included in one of the “least-regrets” pathways selected during the final IRRP pathways workshop and there is commercial interest in investing in developing the resources.

*RE resources that are found in clusters are important to consider in developing supply scenarios. These clusters of resources, called “hot spots” include both areas with adequate transmission and those without. USAID promotes REZs as a transmission planning tool to ensure any generation built and procured can access the grid. Therefore, REZs are hot spots that require new transmission or significant transmission upgrades. However, hot spots that do not require significant transmission upgrades will be called “clustered generation” rather than “REZs” and are thus not part of “designating” REZs for inclusion in the transmission plan.

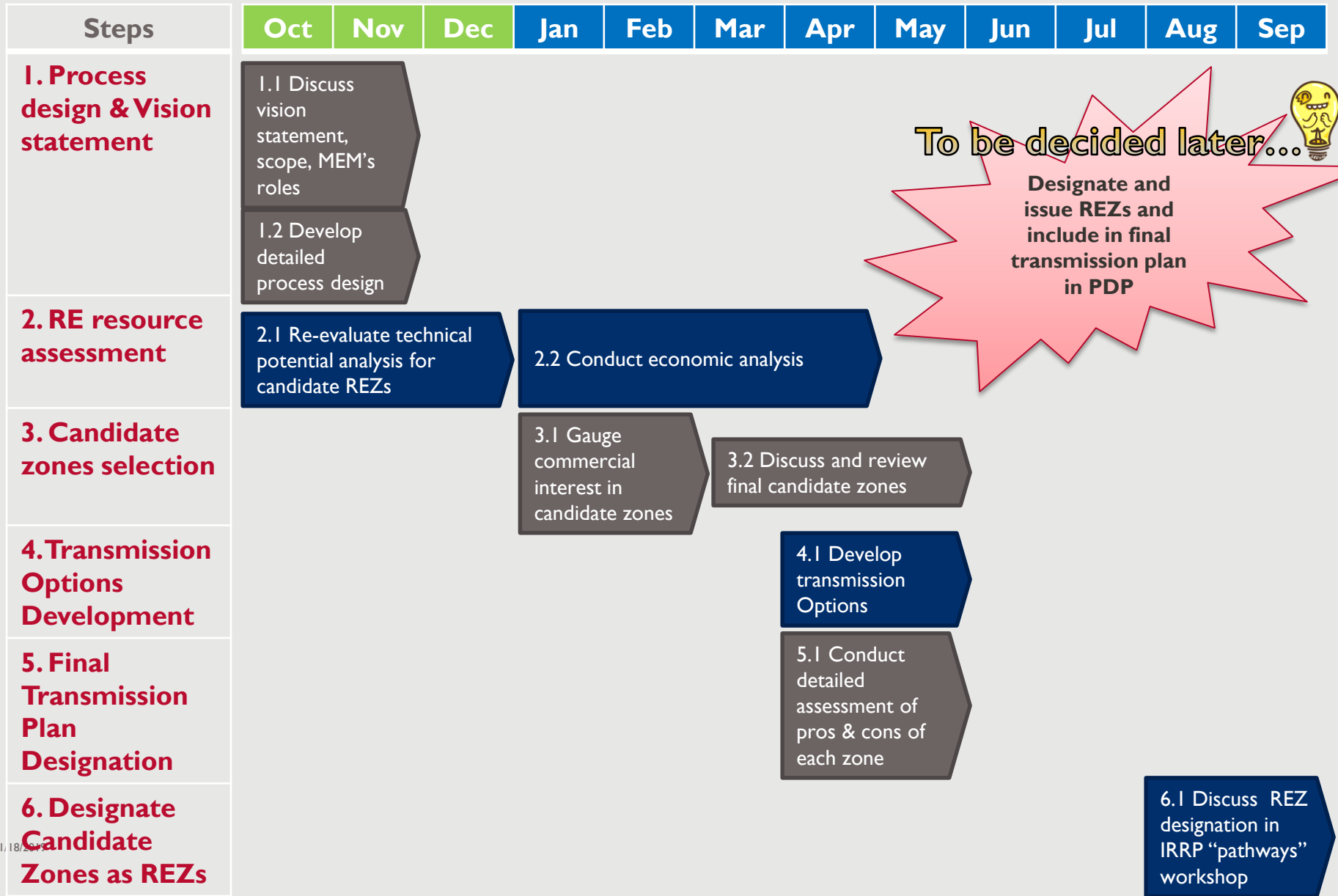
Organizational structure: RE zone development



Roles of MEM

- Support USAID Clean Power Asia to document the REZ process in Lao PDR, including the steps, responsibilities, deliverables, timelines and goals to be incorporated into the IRRP capacity-building plan
- Support USAID Clean Power Asia staff and experts to re-evaluate technical potential analysis for candidate RE zones and conduct economic analysis for each study area based on updated transmission data from EDL
- Gauge commercial interest in candidate zones from the private sector for each study area with support of USAID (continuing work from the July 2018 workshop)
- Support to develop options of transmission planning as part of the IRRP and link with similar works/study with other donors e.g. JICA and World Bank in order to finalized transmission plan.
- Support to incorporate transmission planning options in the IRRP supply model as part of analyzing the least regrets pathways and discussing the potential to designate RE zones for development

Timeline of implementing REZ process



REZ Process Design

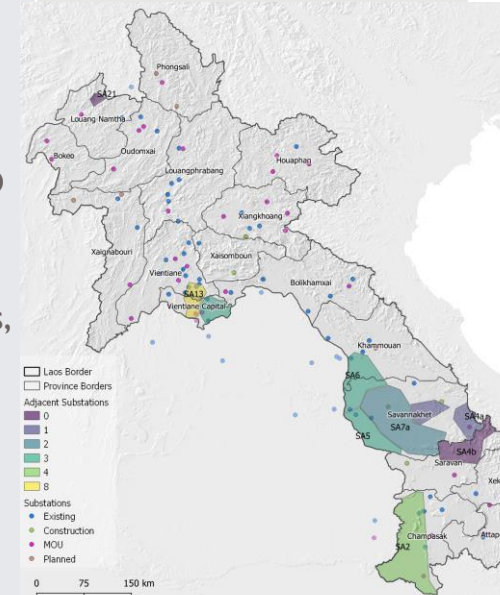
Time line	Activity	Outputs	Who is involved
Step I: Process design & Vision statement			
Oct-Nov 18	1.1 Review and discuss the vision statement, scope, and roles of MEM	REZ Vision statement, scope, organizational structure,	Technical Advisory Committee (Full IRRP team) supported by USAID Clean Power Asia, SEI, JICA
Oct-Nov 18	1.2 Discuss and develop detailed process design for implementing REZs	REZ process design document	Technical Advisory Committee supported by USAID Clean Power Asia, SEI, JICA

REZ Process Design

Time line	Activity	Outputs	Who is involved
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Step 2: RE resource assessment

Oct-Dec 18	<p>2.1 Re-evaluate technical potential analysis for candidate REZs</p> <p><i>**already included in IRRP capacity building plan**</i></p> <ul style="list-style-type: none"> Collect more robust transmission data from EDL, JICA, and World Bank to re-evaluate the analysis presented in July workshop A half-day workshop in Jan 19 will be held to review the updated analysis 	Revised candidate REZs	<p>Technical Advisory Committee</p> <p>supported by USAID Clean Power Asia, other relevant government agencies, SEI, JICA (TBD), World Bank (TBD)</p>
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Jan-Apr 19	<p>2.2 Conduct economic analysis</p> <p><i>**already included in IRRP capacity building plan**</i></p> <ul style="list-style-type: none"> Characterize a development adjustment factor (DAF) for study areas and develop supply curves 	Supply curves for each study area	<p>USAID Clean Power Asia, SEI, JICA (TBD), World Bank (TBD)</p>
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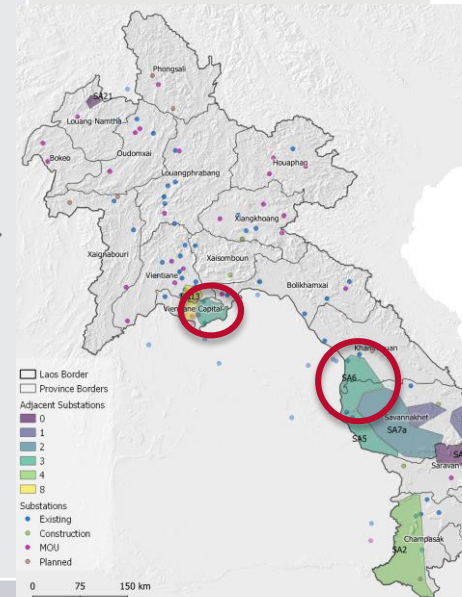
	Potential (GWh/year)	Capacity Factor	LCOE (USD/kWh)
Solar	2,993	15.0%	0.1122
Wind	243	19.2%	0.1530
Small Hydro	100	50.0%	0.0756

REZ Process Design

Time line	Activity	Outputs	Who is involved
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Step 3: Candidate zones selection

Jan-Feb 19	<p>3.1 Gauge commercial interest in candidate zones</p> <ul style="list-style-type: none"> Establishing criteria to determine commercial interest in candidate areas Collect documents from developers that will be evaluated against the criteria. 	Gathering input from developers on their interest in the candidate zones, based on selected criteria	Technical Advisory Committee supported by USAID Clean Power Asia (and private sector providing documents to TAC)
Mar-May 19	<p>3.2 Discuss and review final candidate zones</p> <ul style="list-style-type: none"> Evaluate Developers' documents Select and review candidate zones (high-quality resources & high developers' interest) 	Final selection of candidate zones	Technical Advisory Committee supported by USAID Clean Power Asia



REZ Process Design

Time line	Activity	Outputs	Who is involved
Step 4: Transmission Options Development			
Apr- May 19	4.1 Transmission Options Development <i>**already included in IRRP capacity building plan**</i> <ul style="list-style-type: none"> ▪ Add transmission data for the REZs (and other supply scenarios) to the supply model. ▪ Conduct a cost-benefit analysis 	Transmission analysis completed	IRRP SWG supported by USAID Clean Power Asia, SEI, JICA (TBD), WB (TBD)
Step 5: Final Transmission Plan Designation			
Apr- May 19	5.1 Conduct a detailed assessment of each zone <ul style="list-style-type: none"> ▪ Assess pros and cons as well as reliability ▪ Hold a workshop with JICA to announce the inclusion of the candidate REZs in the transmission plan (TBD) 	Assessment of each zone, candidate REZs are included in JICA's transmission plan	USAID Clean Power Asia, SEI, JICA (TBD), World Bank (TBD)
Step 6: Designate Candidate Zones as REZs			
Aug- Sep 19	6.1 Discussion of REZ designation in the IRRP “pathways” workshop in Aug 19	Determination whether REZs will be designated	Lead Entity (MEM), Technical Advisory Committee supported by USAID Clean Power Asia, other relevant government agencies, SEI, JICA (TBD), World Bank (TBD)

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