



Documents Referred to in the Comments of
Betty Ann Kane
Chairman
Public Service Commission of the District of Columbia
at the
Technical Conference
on
Reliability Federal Energy Regulatory Commission
November 30, 2011

Attachments:

- 1) NARUC Resolution**
- 2) PJM Sept 30th Letter Regarding Potomac River Plant**
- 3) EISPC Energy Zones Power Point Slides**

***Resolution on Maintaining State Authority to
Ensure Reliable Electric Service at Reasonable Rates***

WHEREAS, State commissions are charged with ensuring retail ratepayers receive safe, reliable electric service at just and reasonable rates; *and*

WHEREAS, State commissions have a statutory obligation to ensure that the electric utilities operate and maintain the entire electric system in a reliable manner; *and*

WHEREAS, Electric utilities regulated by State commissions operate the bulk power and local distribution electric systems; *and*

WHEREAS, When there is a failure of facilities or operations, at either the bulk power or local distribution level, service to retail ratepayers can be interrupted; *and*

WHEREAS, State regulatory commissioners must balance the needs of ratepayers, utilities, and the electric system operations, planning, and maintenance; *and*

WHEREAS, Costs associated with reliability standards (both investments and compliance) are ultimately borne by retail ratepayers; *and*

WHEREAS, The North American Electric Reliability Corporation (NERC) and the Federal Energy Regulatory Commission (FERC) authority to set and enforce standards for reliable operation of the bulk power system is defined by Federal Power Act (FPA) Section 215, which explicitly exempts “facilities used in the local distribution of electric energy” from the bulk power system and limits NERC authority to develop standards to the bulk power system; *and*

WHEREAS, While recognizing that the electric system is a contiguous set of facilities, the facilities comprising the electric system must be designated as either part of the bulk power system or local distribution system for statutory administration consistent with the FPA; *and*

WHEREAS, The design of the bulk systems and design of the local distribution systems are both complicated and varied and, as such, standards designed for the bulk system applied to the local distribution system can be inappropriate and overly costly and can undermine the reliability of the entire system; *now, therefore be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 2011 Summer Committee Meetings in Los Angeles, California, urges NERC and FERC to respect the statutory limits of their authority under FPA 215 and not attempt to overreach into State jurisdictional local distribution facilities when defining the bulk system or setting reliability standards; *and be it further*

RESOLVED, That new and revised NERC standards should demonstratively provide reliability benefits to consumers that justify their costs; *and be it further*

RESOLVED, That NARUC and State commissions should be vigilant in monitoring NERC and FERC activities to ensure new and revised standards are consistent with FPA 215, enhance reliability, and benefit ratepayers.

*Sponsored by the Committees on Electricity, Critical Infrastructure,
and Energy Resources and the Environment*

Adopted by the NARUC Board of Directors July 20, 2011



955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, PA 19403-2497

Michael J. Kormos
Senior Vice President - Operations

September 29, 2011

Betty Ann Kane, Chairman, Public Service Commission
1333 H Street, NW, 2nd Floor Tower
Washington, DC 20005

Re: Evaluation of Potomac River Generating Station Deactivation

Dear Madam Chair,

This letter is submitted on behalf of PJM Interconnection, L.L.C. ("PJM"), in response to the July 20, 2011 letter ("July 20 Letter") from the Public Service Commission of the District of Columbia ("PSC) requesting PJM to evaluate the potential deactivation (retirement) of the Potomac River Generating Station. PJM performed studies for years 2012 and 2016 using multiple conditions.¹

This analysis was performed in accordance with studies required under section 113.2 of the PJM Tariff and this letter will serve to notify you that the Deactivation of the Potomac River Generating Station is expected to adversely affect the reliability of the PJM Transmission System absent upgrades to the Transmission System.

PJM Interconnection Analysis performed a study of the Transmission System and found reliability concerns that would result from the Deactivation of these generating units in 2016. The reliability impacts are being addressed in conjunction with baseline reliability impacts in the 2011 RTEP. The specific reliability impacts resulting from the proposed Deactivation include:

Deactivation in 2012

- No reliability violations are attributed to the deactivation of the Potomac River Generating Station

¹ Based on a Notice to Deactivate submitted on behalf of GenOn Potomac River, LLC ("GenOn") requesting to deactivate (retire) the Potomac River Generating Station Units Nos. 1, 2, 3, 4, and 5 effective October 1, 2012, PJM advised GenOn that PJM did not identify any reliability violations resulting from the proposed 2012 Deactivation Date.

Deactivation in 2016

Note that 2016 baseline studies are currently being conducted which may require reinforcements which may affect the results below.

N-1 Thermal and Voltage Study:

- Overload of Bristors – Ox 500 kV line for the loss of Ladysmith to Possum Point 500kV line under critical system conditions of Possum Point Unit 5 off-line
- Overload of Fredericksburg – Mine Rd 230 kV line for the loss of Ladysmith to Possum Point 500kV line under critical system conditions of Possum Point Unit 5 off-line

Generator Deliverability Study:

- Overload of Pleasant View to Edwards Ferry for the loss of Burches Hill – Possum Point 500 kV line
- Overload of Clark to Idlywood 230 kV line for the loss of Burches Hill – Possum Point 500 kV line
- Overload of Loudoun to Brambleton 500 kV line for the loss of Burches Hill – Possum Point 500 kV line

N-1-1 Thermal and Voltage Study:

- Overload of Burches Hill – Palmers Corner 230 kV line for loss of Burches Hill – Palmers Corner 230 kV line 23091 + Burches Hill – Palmers Corner 230 kV line 23092
- Voltage violations for the loss of Chance – Ladysmith 500 kV line + loss of Ladysmith – Possum Point 500 kV line
- Voltage violations for the loss of Bristor – Ox 500 kV line + loss of Ladysmith – Possum Point 500 kV line
- Voltage violations for the loss of Chalk Point – Burches Hill 500 kV line + loss of Burches Hill – Possum Point 500 kV line
- Voltage violations for the loss of Burches Hill – Possum Point 500 kV line + loss of Chalk Point 500/230 kV transformer
- Voltage violations for the loss of Ladysmith – Possum Point 500 kV line + loss of Chalk Point 500/230 kV transformer

Current estimates for completion of the required system reinforcements indicate that the required reinforcements can be completed by May 1, 2016 for the 2016 violations.

Please be advised that four² out of the 11 system reinforcements identified below as required to mitigate reliability violations associated with the potential deactivation of the Potomac River Generating Station are currently included or will be included in the Regional Transmission Expansion Plan (RTEP).

² The following system reinforcements included in the PJM 2015 RTEP are: Reconductoring of the four circuits from Burches Hill to Palmers Corner and replacement of terminal equipment, Reconfiguration of Line #203 to feed Edwards Ferry substation radial from Pleasant View 230 kV and install a new breaker bay at Pleasant View Substation, Construction of a 2nd Clark - Idylwood 230 kV line and installation of 230 kV gas-hybrid breakers at Clark substation, Rebuild of the Loudoun to Brambleton 500kV line.

Please contact Aaron Berner (610-666-8951) (bernea@pjm.com) if you have any questions about the PJM analysis.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Michael J. Kormos', with a large, stylized flourish at the end.

Michael J. Kormos
Senior Vice President
Operations

#666570

cc: Christophe Tulou, DDOE
Cecily Beall, DDOE
Rick Morgan, Commissioner PSC
Lori Murphy Lee, Commissioner PSC

Deactivation Study

Potomac River Generating Station

General

PJM received a request from the District of Columbia Public Service Commission to evaluate the deactivation of the Potomac River generators. The study was performed on simulated conditions in the 2012 summer peak period and 2016 summer peak period.

Reliability Analysis Results

PJM Interconnection Analysis department performed the following studies for these units:

Deactivated Units:

- Potomac River Generating Station

Deactivation in 2012

No reliability violations are attributed to the deactivation of the Potomac River Generating Station

Deactivation in 2016

Note that 2016 baseline studies are currently being conducted as part of the 2011 RTEP. In some instances the deactivation of the unit aggravated problems that had been identified with the generators in-service. Regardless it is estimated that all reinforcements can be completed prior to June 1, 2016.

N-1 Thermal and Voltage Study:

- Overload of Bristors – Ox 500 kV line for the loss of Ladysmith to Possum Point 500kV line under critical system conditions of Possum Point Unit 5 off-line

Solution: Replacement of wave traps on the Bristers to Ox 500kV line

- Estimated Cost: \$80,000

- Overload of Fredericksburg – Mine Rd 230 kV line for the loss of Ladysmith to Possum Point 500kV line under critical system conditions of Possum Point Unit 5 off-line

Solution: Replacement of terminal equipment on the Fredericksburg to Mine Rd 230 kV line

- Estimated Cost: \$300,000

Generator Deliverability Study:

- Overload of Pleasant View to Edwards Ferry for the loss of Burches Hill – Possum Point 500 kV line

Deactivation Study

Potomac River Generating Station

Solution: Reconfiguration of Line #203 to feed Edwards Ferry substation radial from Pleasant View 230 kV and install a new breaker bay at Pleasant View Substation

- Estimated Cost: \$4,000,000

- Overload of Clark to Idlywood 230 kV line for the loss of Burches Hill – Possum Point 500 kV line

Solution: Construction of a 2nd Clark - Idylwood 230 kV line and installation of 230 kV gas-hybrid breakers at Clark substation

- Estimated Cost: \$20,000,000

- Overload of Loudoun to Brambleton 500 kV line for the loss of Burches Hill – Possum Point 500 kV line

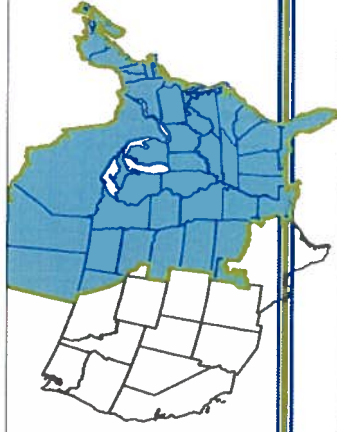
Solution: Rebuild of the Loudoun to Brambleton 500kV line

- Estimated Cost: \$40,000,000

N-1-1 Thermal and Voltage Study:

- Voltage violations for the loss of Chance – Ladysmith 500 kV line + loss of Ladysmith – Possum Point 500 kV line
- Voltage violations for the loss of Bristol – Ox 500 kV line + loss of Ladysmith – Possum Point 500 kV line
- Voltage violations for the loss of Chalk Point – Burches Hill 500 kV line + loss of Burches Hill – Possum Point 500 kV line
- Voltage violations for the loss of Burches Hill – Possum Point 500 kV line + loss of Chalk Point 500/230 kV transformer
- Voltage violations for the loss of Ladysmith – Possum Point 500 kV line + loss of Chalk Point 500/230 kV transformer

The deactivation of the Potomac River generating units will exacerbate voltage problems in 2016 that are currently being studied in the RTEP. The N-1-1 voltage violations noted above are a subset of the larger voltage problems that will likely require reactive upgrades at several locations within PJM. It is estimated that these reactive upgrades will be installed by the summer of 2016.



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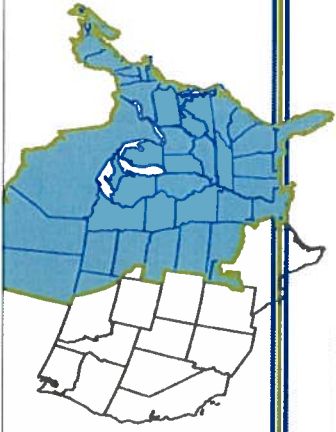
Attachment #3

CLEAN ENERGY ZONES

Study Tasks – Labs' Tasks

Energy Zones Workgroup and the National Laboratories—Argonne, Oak and NREL

September 2011 EISPC Meeting



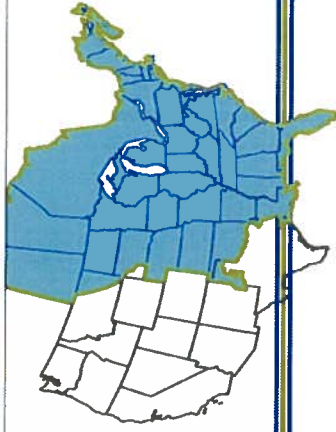
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Background on Labs' Involvement in Study

- In 2010, DOE issued a call for national laboratories to provide technical assistance and support to EISPC as well as the other FOA-68 awardees in the other Interconnections
- Argonne was selected by DOE as the Lead Lab
- DOE instructed and provided separate funding to the Labs to assist EISPC in identifying clean energy zones in the EI
- The work on the energy zones study will be carried out jointly by 3 national labs:
 - Argonne National Laboratory (Argonne)
 - National Renewable Energy Laboratory (NREL)
 - Oak Ridge National Laboratory (ORNL)



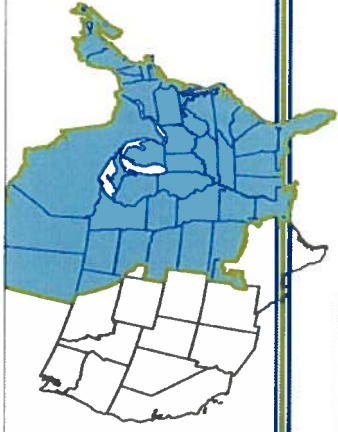


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Energy Zones Study Goals and Objectives

- To provide information identifying and to inventory **opportunities (in map form) for developing resources** in all states and regions in the EI;
- Develop a suite of methodologies that lay out the **process for identifying Energy Zones** that support public policy objectives;
- To provide information to regions and states regarding circumstances (such as environmental factors, population densities, etc.) that could **inhibit or prevent the potential development of energy infrastructures** within areas containing identified energy resources and offer potential solutions;
- To enable the states to inform and collaborate in stakeholder generation and transmission planning within the timeframes of the other EISPC modeling efforts which is generally to 2030. The EZ Study will look at technologies and **resources developed in both a longer term and shorter term basis**; and
- To focus its analysis on **identifying concentrated energy resource areas** in the EI. Depending on their locations in relation to load centers, such concentrated energy resource areas could potentially be developed to **either avoid the need for transmission construction or to optimize transmission planning.**



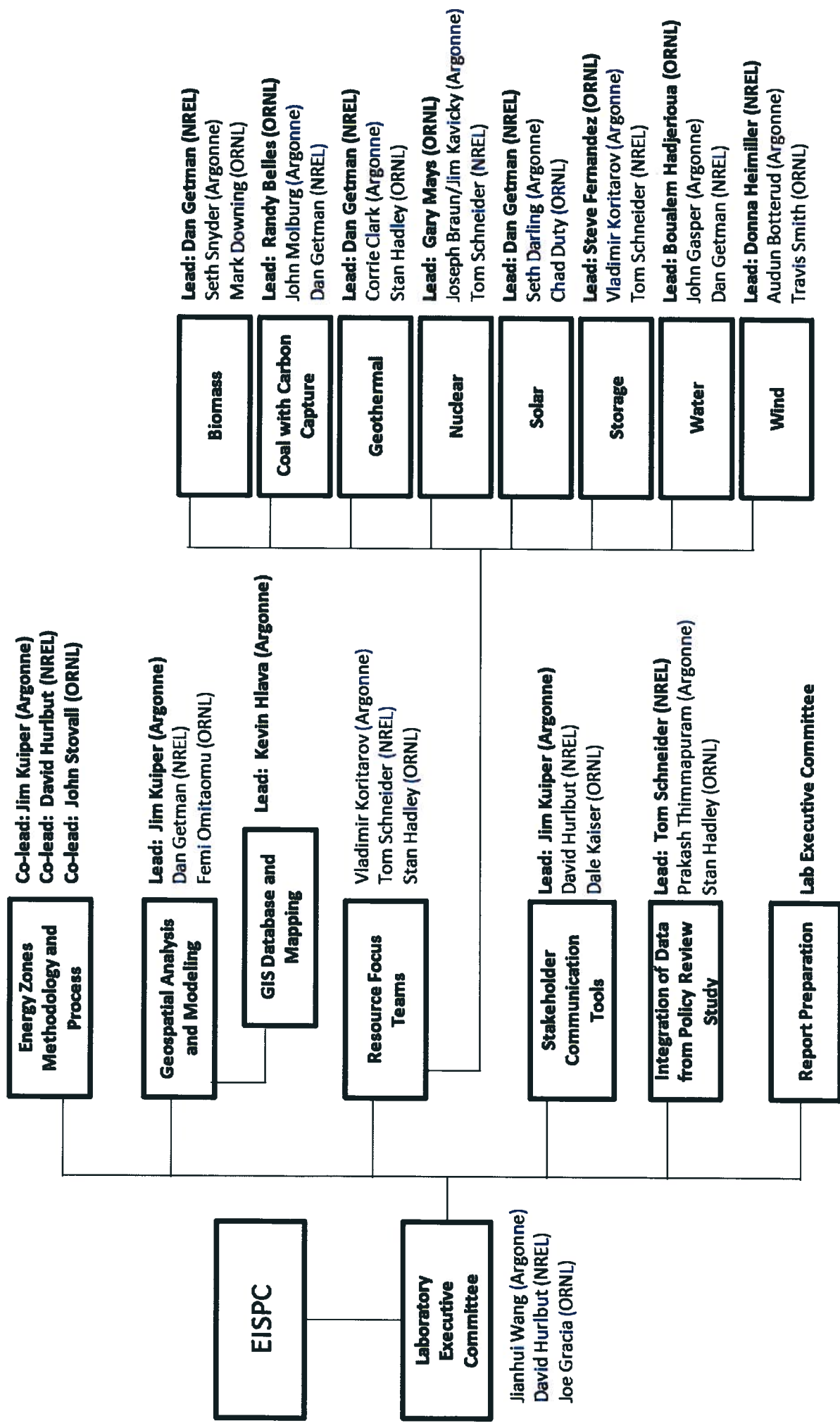
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Clean Energy Technologies Included in the EZ Study

- **Biomass and biogenic fuels**
- **Clean coal with carbon capture and sequestration**
- **Geothermal**
- **Nuclear**
- **Solar (PV and thermal and roof-top)**
- **Storage (Pumped-hydro and compressed-air energy storage)**
- **Water**
- **Wind**

Organizational Chart for the EISPC Energy Zones Study



Major Project Tasks for Energy Zone Study

■ *Resource Focus Teams*

- Subject-area experts for each energy resource category (biomass, coal with carbon capture, geothermal, nuclear, solar, storage, water, and wind) will be organized in resource focus teams to provide sources of information for resource data and an assessment of resource potential

■ *Energy Zones Methodology and Process*

- In collaboration with EISPC, develop a suite of methodologies that lay out the process for identifying clean energy zones.

■ *Geospatial Analysis and Modeling*

- Develop a web-based GIS system and database of clean energy resource potential in the EI
- Develop tools for viewing and analysis of data and creating user-defined layers of information

■ *Stakeholder Communication*

- Facilitate communication with stakeholders and host workshops and webinars to familiarize them with the GIS-based system, mapping tools, and the methodology and process for identification of energy zones

Geospatial Analysis and Modeling

■ *Geographic Information System (GIS) Database and Mapping*

- The laboratories will compile, maintain, and share a comprehensive GIS database focused on energy resources, land jurisdictions, management designations, sensitive resources, and other information relevant to energy zone identification.

■ *Spatial Analysis and Modeling*

- In collaboration with EISPC, the Laboratories will perform the analysis and execute models supporting the energy zones methodology and process

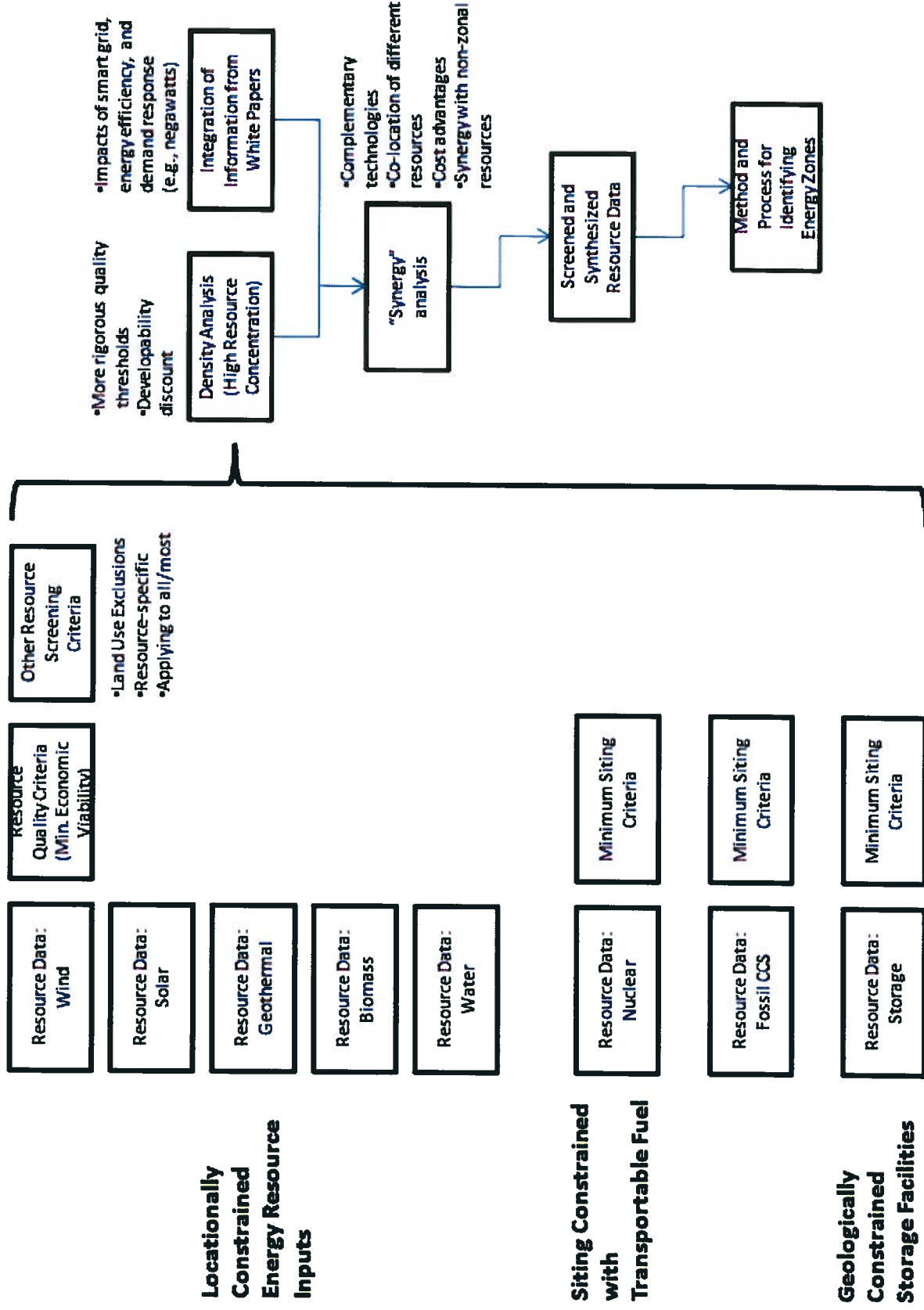
■ *Mapping*

- Results of work will be illustrated with maps to document key steps of the decision-making process for stakeholder participants

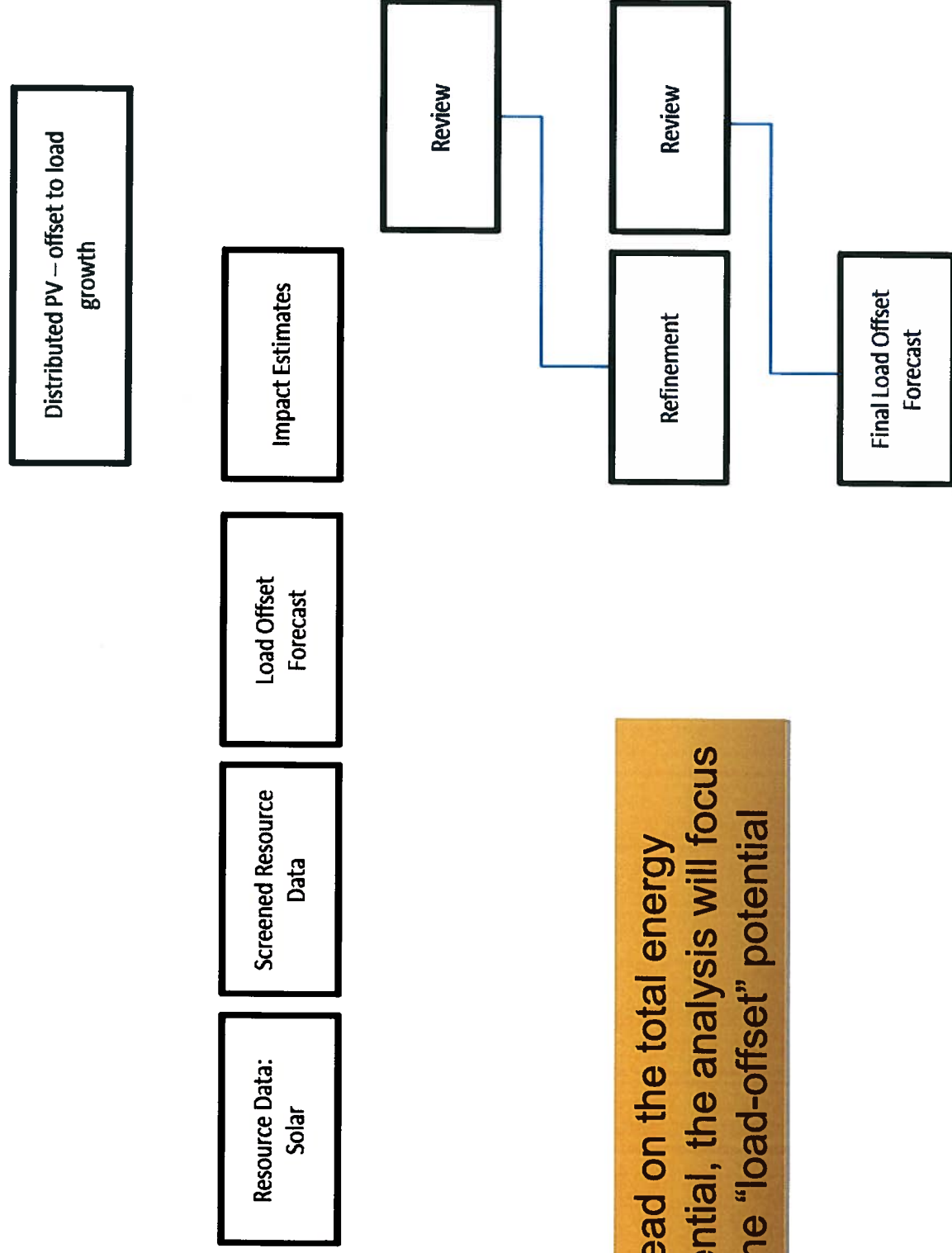
The Laboratories will develop methodology and process and provide technical support to EISPC and its stakeholders for the identification of energy zones within the Eastern Interconnection.

Preliminary Methodology and Process for Identifying Clean Energy Resource Potential

Process Flow



Preliminary Methodology for Identifying Roof-Top Solar PV Potential



Instead on the total energy potential, the analysis will focus on the “load-offset” potential

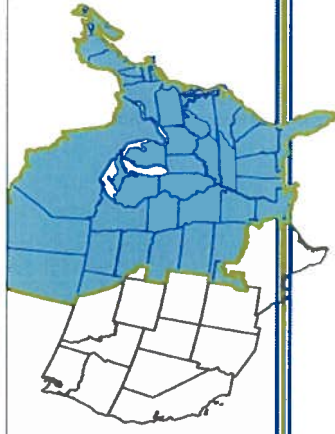
Main Project Tasks and Schedule of Activities

Task	2011			2012			
	Jun-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
1) Project Management							
2) Energy Zones Methodology and Process							
3) Geospatial Analysis and Modeling							
3a) Geographic Information System							
Compile GIS							
Maintain and share GIS							
3b) Spatial Analysis and Modeling							
Resource-based prelim. analysis							
Review and refinement period							
3c) Mapping							
4) Resource Focus Teams							
Develop resource data							
Provide ongoing support							
5) Stakeholder Communication							
Develop web map application							
Host/maintain web map app.							
Host web & in-person workshops							
6) Report Preparation							
Produce draft							
EISPC and peer review							
Final report							

Energy Zones Study Deliverables

- **Clear, consistent and practical methods and processes** to identify energy resource areas in all states;
- An **inventory of potential energy resource areas in all states**. As part of this, a layered map will be developed showing potential resource areas for each targeted technology that could be overlaid to show the effect of combinations of certain resources or all of the resources that may vary according to regional policies, energy infrastructure, or other factors. The map may be presented with gradations for the quality of each potential resource area in addition to possible layers for later deployment of currently unavailable technologies;
- Clear, consistent and practical **information regarding circumstances that may impact the potential development** of energy resource areas into energy zones; and
- **Clear, consistent and practical methods and processes** offered to federal, state and regional lawmakers and policymakers to use **to evaluate energy resource areas for potential development into energy zones in all states**.

Note that the labs are not expected to identify actual energy zones, but to provide the methodology and process (tools) for identifying energy zones by stakeholders.

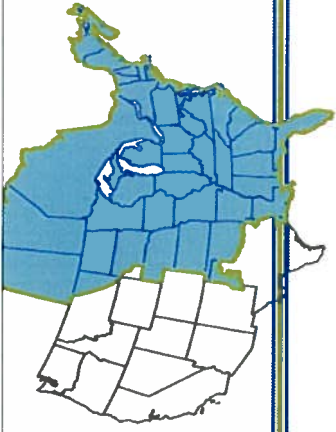


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Workgroup and Labs – Next Steps

- ***Develop the Specific Information and RFPs for Non-Labs Tasks***
- ***Issue RFPs***
- ***Analyze Bids/recommend winning bids to EISPC for approval (on or before November EISPC meeting)***
- ***Negotiate Contracts – Begin work***



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Non-Lab Tasks to be Contracted

- **80-Meter Hub Height wind data for EI**
- **Mapped energy infrastructure *for use in determining potential nuclear, etc. resource areas***
- **Conduct a State-by-State Survey of Policies/Laws relevant to Zone Siting**
- **Stakeholder Engagement *to be conducted after the Study is complete but not yet final***
- ***Other Tasks may be identified during the Process***