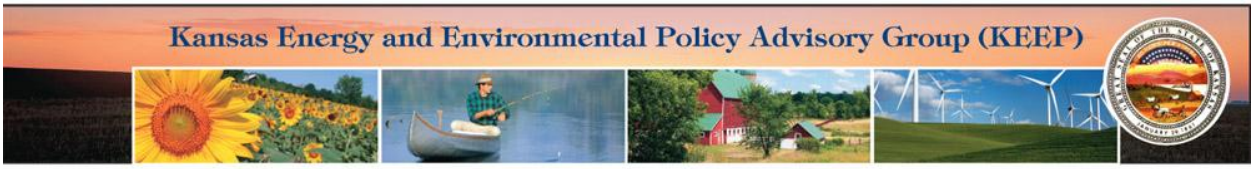

Initial Observations Related to the Catalog of Potential State Actions Energy Supply (ES) Technical Work Group (TWG)

This document is designed to capture initial observations and background information from Energy Supply TWG members related to the various potential actions included in the Energy Supply Catalog of Potential State Actions. It is anticipated that these observations will be particularly useful to inform TWG discussions around priorities for more detailed analysis. These observations are also being captured as they may include points or text that would be relevant to include in future work products of the ES TWG or KEEP.

Observations are grouped under the section or subsection to which they are relevant.

ES-1 EMISSIONS POLICIES AND OVERARCHING ITEMS

TWG member observations include:

- To support a robust healthy economy, electricity supply must be reliable, readily available, and provided at the lowest cost consistent with public policy objectives. Energy supply is not monolithic, but is dependent upon investor owned, public-owned, and consumer-owned cooperative suppliers.

  Energy suppliers, along with those who operate transmission and distribution systems are variously regulated by the Federal Energy Regulatory Commission (FERC), the Securities Exchange Commission (SEC), by individual state regulatory commissions (in Kansas, the Kansas Corporation Commission), and by publicly elected or cooperatively elected governing boards.

  The energy system is further evaluated for reliability purposes by the National Electric Reliability Council (NERC) and by regional (multi-state) independent transmission system operators. Kansas utilities are members of the Southwest Power Pool, the oldest regional reliability region in the nation, and the primary authority governing energy reliability and energy transfer between energy supply companies in Kansas and other states in the region New energy resources which are to be connected to the SPP bulk transmission network must first undergo engineering evaluations of the impact of newly connected energy resources, regardless of whether they are powered by steam, combustion turbines, or renewable sources.

  Nationwide, many electric utilities participate jointly to evaluate various issues and matters of concern to the business of energy supply thru the Electric Power Research

Institute (EPRI). EPRI has evaluated the measures which must be undertaken to assure the provision of reliable energy in the context of reducing the carbon released.

The release of carbon dioxide and other potential greenhouse gases is but one aspect of the complex industry of energy supply. To implement carbon release restrictions without evaluating the impact on the industry and the health of the local, state and national economy is fraught with risk. An approach which merely rations energy would be simple to implement but would have tremendous consequences, foreseen and unforeseen.

1.0 Overarching items

1.1 GHG cap and trade

1.2 Carbon (GHG) tax

1.3 Generation performance standards and/or mitigation requirements for electricity

1.4 Integrated resource planning (IRP)

1.5 Voluntary GHG commitments

1.6 Technology research & development

TWG member observations include:

- Technology R&D is necessary to the preservation of a reliable electric supply under the carbon constraints which are being contemplated as a matter of public policy. A single technology will not accomplish the broad objectives, rather technologies of various types and which now exist at various points along the technology development curve will require consideration.

ES-2 RENEWABLE ENERGY AND ENERGY EFFICIENCY

2.1 Renewable and/or Environmental Portfolio Standard (RPS/EPS)

TWG member observations include:

- With Renewable Energy Credit trading, future actions should include a variety of renewable resources.

2.2 Grid-based renewable energy incentives and/or barrier removal

2.3 Distributed renewable energy incentives and/or barrier removal

2.4 Green power purchases and marketing

2.5 Combined Heat and Power (CHP) standards, incentives and/or barrier removal

2.6 Pricing strategies to promote renewable energy and/or CHP (e.g. net metering)

2.7 Renewable energy development issues (zoning, siting, etc.)

2.8 Technology-focused initiatives (biomass co-firing, energy storage, fuel cells, etc.)

2.9 Public benefits charge

2.10 Research and development for renewable technologies

2.11 Co-location or integration of energy producing facilities

ES-3 FOSSIL FUEL AND NUCLEAR ELECTRICITY

3.1 Advanced fossil fuel technology (e.g. IGCC, CCSR) incentives, support, or requirements

3.2 New nuclear power

3.3 Relicensing/uprating existing nuclear power

3.4 Efficiency improvements and repowering existing plants

TWG member observations include:

- Efficiency improvements are perhaps low return, but should not be discouraged.
- Re-powering should not be limiting as to fuels, but should provide for overall energy requirements. (Example – repowering coal facility with more efficient and lower emitting coal facilities – i.e. Southern Illinois Electric Cooperative.)

3.5 Technology-focused initiatives

ES-4 FUEL PRODUCTION, PROCESSING AND DELIVERY

4.1 Oil and gas production: GHG emission reduction incentives, support, or requirements

TWG member observations include:

- Encourage all natural gas companies to participate in EPA GAS STAR program, a voluntary program to report and reduce methane emissions.

4.2 Natural gas transmission and distribution

TWG member observations include:

- Encourage all natural gas companies to participate in EPA GAS STAR program, a voluntary program to report and reduce methane emissions.

4.3	**Oil refining: GHG emission reduction incentives, support, or requirements**

4.4	**Coal production: GHG emission reduction incentives, support, or requirements**

4.5	**Coal-to-liquids and gas-to-liquids production: GHG emission reduction incentives, support, or requirements**

4.6	**Low-GHG hydrogen production incentives and support**

TWG member observations include:

- This is really hydrogen production methods efficiency, including new processes.

ES-5	**CARBON CAPTURE AND STORAGE OR REUSE**

5.1	**CCSR incentives, requirements and/or enabling policies (administration, regulation, liability, incentives)**

5.2	**R&D for CCSR**

TWG member observations include:

- CCSR has potential application (e.g., production of algae) in many industrial facilities that use conventional fossil fuel.

ES-6	**OTHER ENERGY SUPPLY OPTIONS**

6.1	**Transmission system upgrading**

TWG member observations include:

- Transmission construction will need to be supported (and probably constructed) by the existing owners of the electric networks.
- Transmission upgrades should NOT place a cost burden on ratepayers (or cooperative owners) that exceeds the benefits received by those entities.

6.2 Reduction of transmission and distribution line losses

TWG member observations include:

- Encourage the appropriate upgrading of transmission resources - the cost of which should not be disproportionately borne by those receiving the benefits of such upgrades.

6.3 General distributed generation support (interconnection rules, net metering, etc.)

6.4 Environmental (GHG emissions) disclosure

6.5 Landfill Gas Recovery (see also Waste)

6.6 Waste to Energy (see also Waste)

TWG member observations include:

- Waste to energy has potential application in many industrial facilities that use conventional fossil fuel.

6.7 N_2O reduction co-benefit

6.8 Smart Grid

6.9 Consider expanded hydroelectric power opportunities

ES-7 EDUCATION AND OUTREACH

7.1 General education to public on energy supply options

7.2 Workforce development education to support energy supply options and economic development

TWG member observations include:

- Education that is targeted at the workforce development needs that will occur with the numerous options and developing technologies that are included in the draft. In addition, consider education as an aid to economic development for the state. Develop initiatives as to how specific expertise in the areas of options in general, result in economic opportunities in the state. The Community College system here in Kansas is the ideal method to develop and deploy this educational curriculum. I understand that the technology aspect is a natural focus for our work. And at the same time offer up that inclusion of these educational "software" ideas have great potential to support our plans.