The background of the slide is a dark blue-grey color. It features a faint, light-colored map of the state of Wyoming. In the lower-left corner of the map, there is a compass rose with the letter 'N' indicating North. The text is centered on the slide in a yellow, bold, sans-serif font with a thin black outline.

The Big Picture
Discussion with the Wyoming
Infrastructure Authority
and
Joint Minerals Committee

Steve Ellenbecker
Wyoming Infrastructure Authority

Challenges for the Western Power System

- ▶ **Planning** - How much generation and efficiency is needed to provide reliable power to consumers over the next 20 years?
 - What energy efficiency/demand response should we count on?
 - What type of generation is needed?
 - ▶ State and provincial requirements
 - ▶ Future federal carbon and renewable requirements
 - What transmission capacity is needed?
- ▶ **Integration** - How can large amounts of variable generation (wind/solar) be integrated into the grid at low cost?
- ▶ **Grid use** - How can the existing grid be used more efficiently?

What are the key uncertainties and limitations on options?

► Uncertainties

- Greenhouse gas emission limits
- Changes in load due to -
 - Changes in the economy
 - Changes in demand (e.g., greater efficiency, new sources of demand such as plug-in vehicles)
- Changes in technology

► Limitations, such as -

- Water availability
- Wildlife restrictions

Transmission Planning: How we got to where we are

► May 2001

- In midst of electricity crisis Governors ask industry and CREPC to develop interconnection-wide conceptual transmission plans in 60 days.
- First pro-active interconnection-wide transmission plan

► August 2001

- Governors like plan and ask that process be institutionalized

► 2002-2005

- SSG-WI institutionalizes interconnection-wide planning
- RTO effort collapses; WECC asked to take on transmission planning
- RMATS undertakes first subregional planning to use production cost modeling

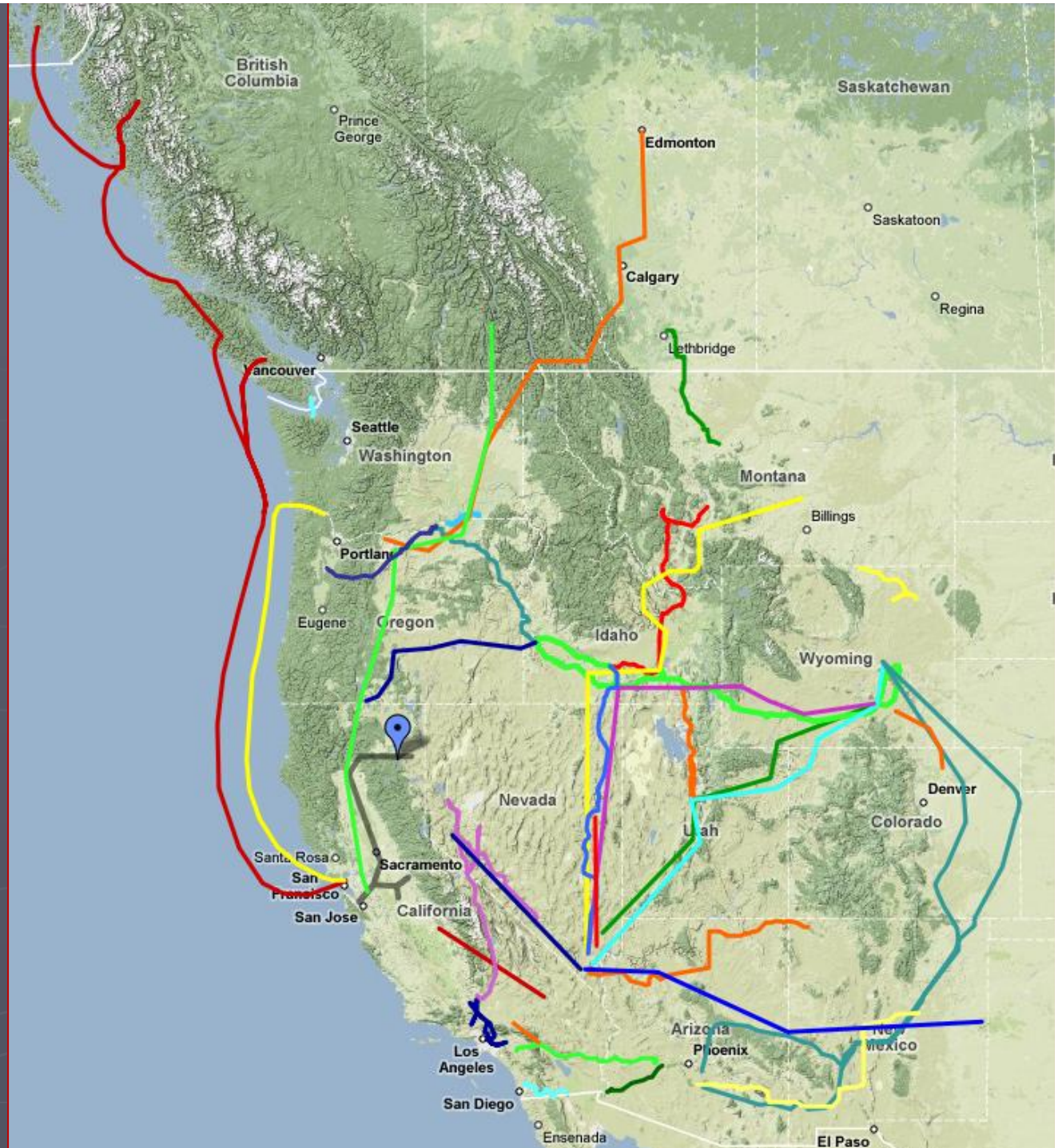
Transmission Planning: How we got to where we are (cont'd)

- ▶ 2006-2009
 - WECC creates TEPPC
 - First study results in 2008 (WIRAB low carbon case)
 - Tom will describe the WECC planning process
- ▶ FERC gets into transmission planning
 - 2007 open transmission access order 890 requires regional transmission planning
 - 2009 regional technical conferences and request for comments
- ▶ DOE stimulus money under transmission FOA

How we got to where we are

	01	02	03	04	05	06	07	08	09	10
WGA conceptual transmission plans	█									
SSG-WI		█	█	█	█					
WAG					█					
RMATS (subregional production cost study)			█	█						
FERC Order 890							█			
WECC-TEPPC						█	█	█	█	█
First round of studies , including WIRAB low carbon request								█		
WREZ study requests									█	
FOA										█
Subregional planning	Morphed over time									

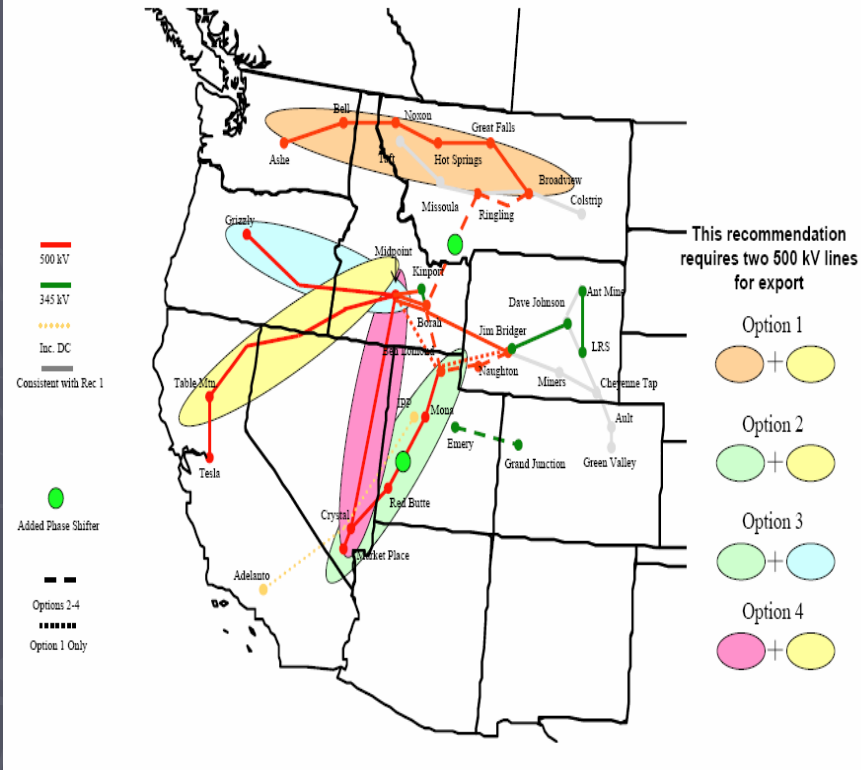
Major Transmission Proposals in the Western Interconnection



Does Planning Lead to Proposed Projects?

RMATs and current proposed projects

Figure E- 2: Transmission Expansion Extending Beyond the Rocky Mountain Region

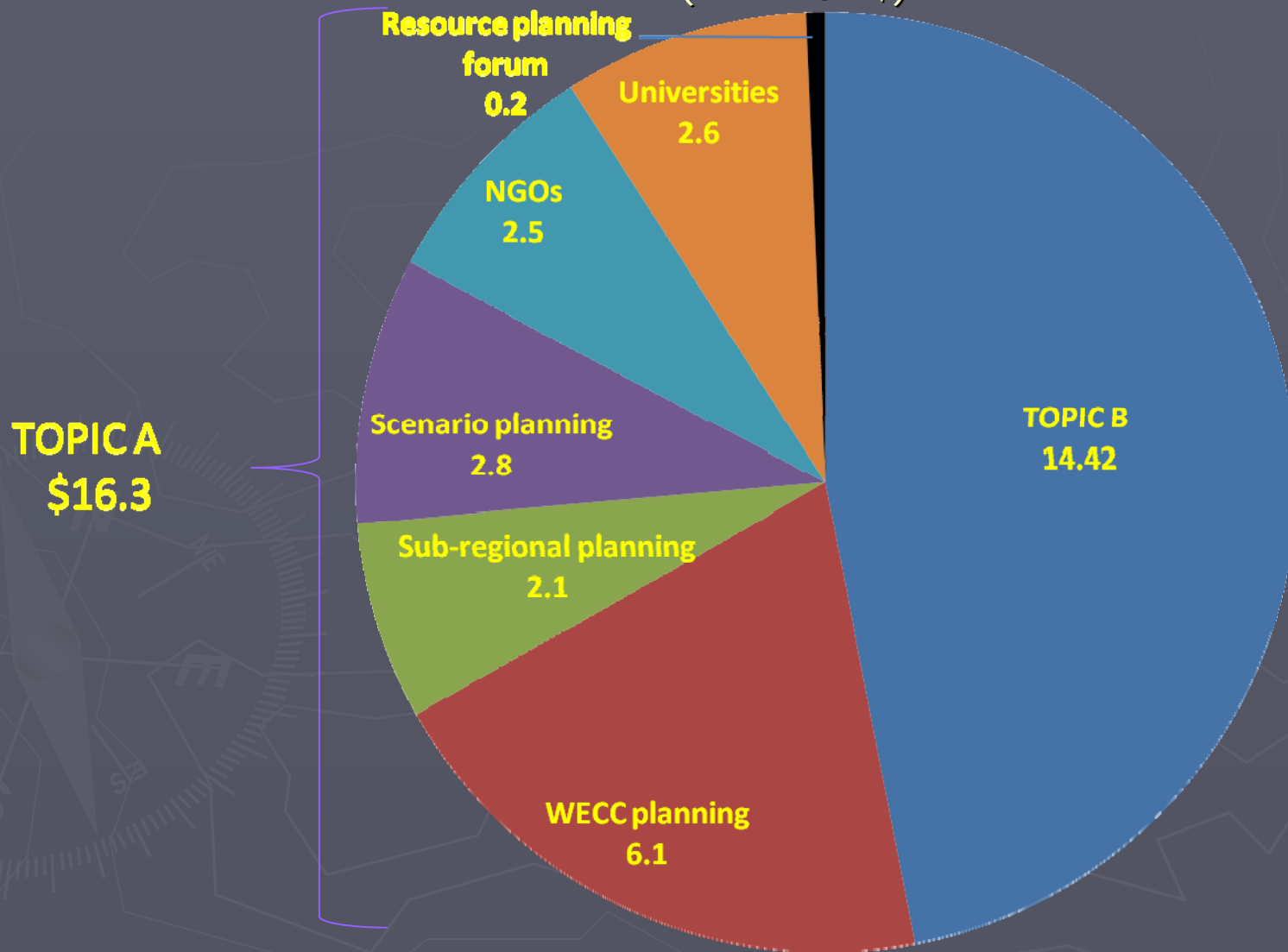


Where is transmission planning headed?

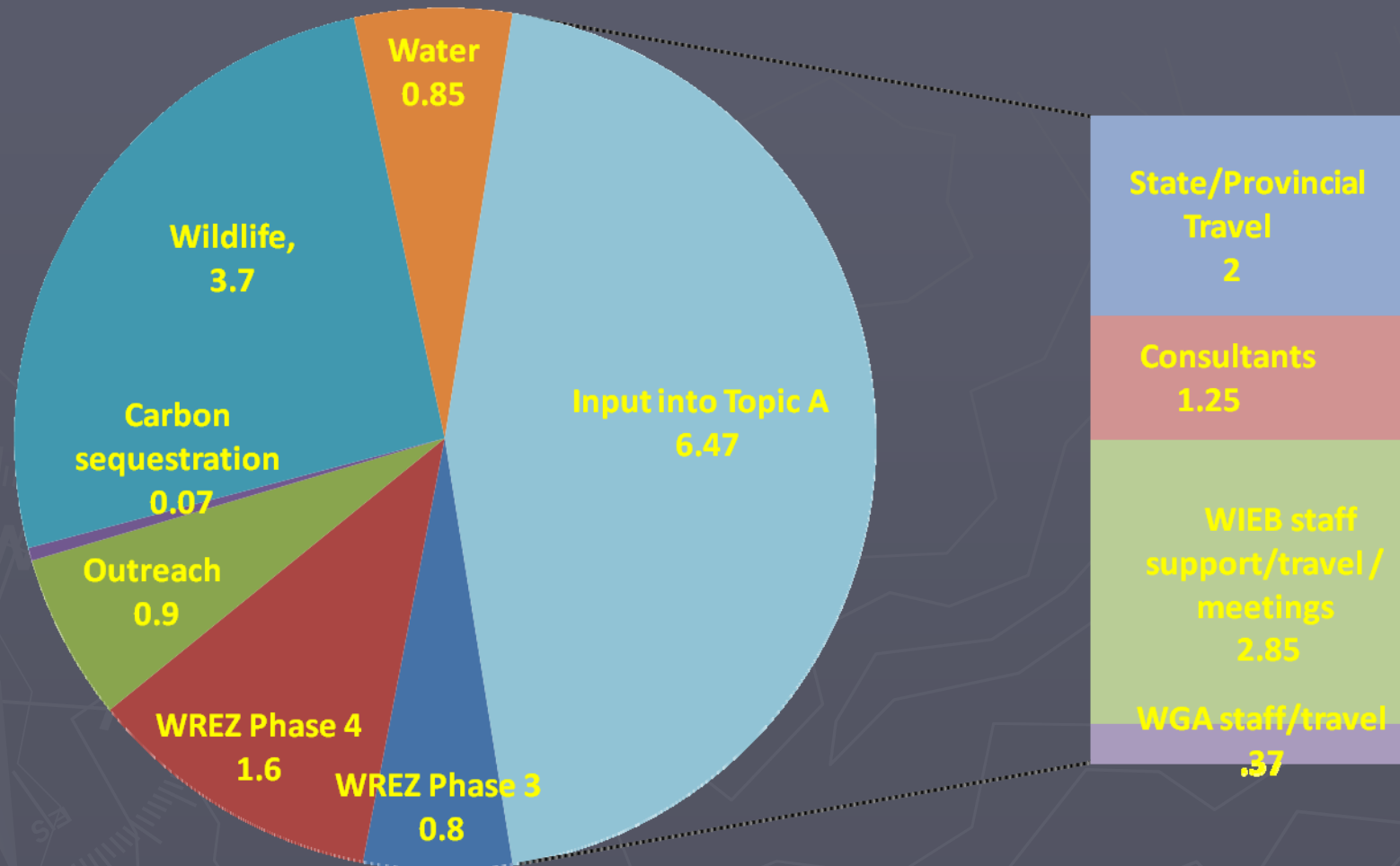
- ▶ More federal involvement in regional transmission planning
 - Stage being set for new FERC order
 - Pending legislation expands FERC role in planning, siting and cost allocation
- ▶ Increasing pressure from states (and others) for more robust planning, e.g., total cost evaluated, longer term planning horizon
- ▶ Better links between subregional planning and WECC planning

Responses to DOE WECC Topic A and WGA B proposals

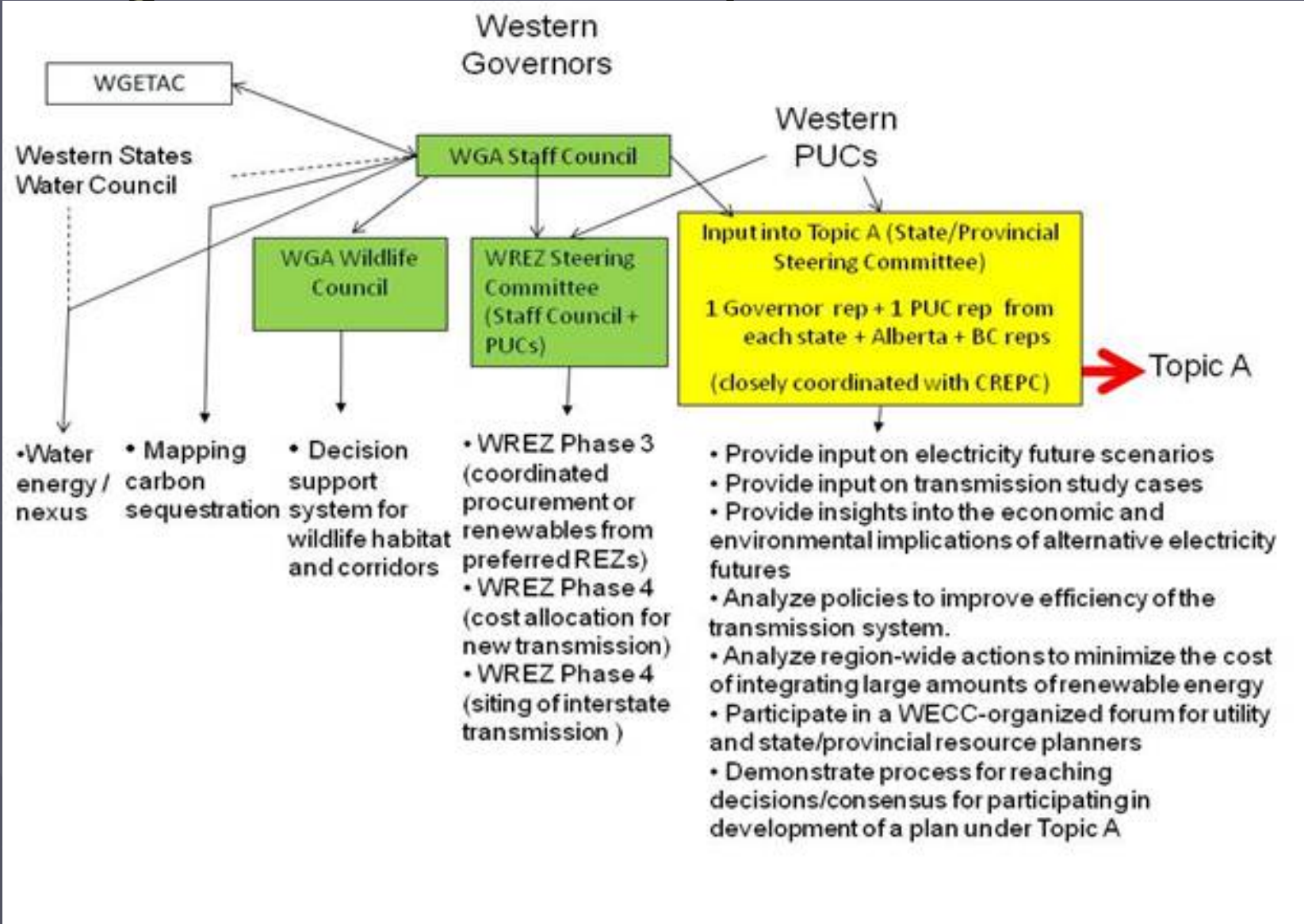
(in million \$)



Topic B proposed budget (in million \$)



Organization of Topic B activities



Steering Committee tasks: How will they be executed? What's missing?

- ▶ Provide input on electricity futures
- ▶ Provide input on transmission case studies
- ▶ Provide insights on the economic and environmental implications of alternative electricity futures
- ▶ Analyze policies to improve efficiency of the transmission system
- ▶ Analyze region-wide activities to minimize the cost of integrating large amounts of renewable energy
- ▶ Participate in a WECC-organized forum for utility and state/provincial resource planners
- ▶ Demonstrate a process for reaching decisions/consensus for participating in development of a plan under Topic A



ELEMENTS FOR COOPERATIVE AGREEMENT AMONG PARTICIPATING STATES

Western States Energy & Environment Symposium
October 27, 2009

OPPORTUNITIES FOR LEGISLATIVE ACTION AND COOPERATION AMONG PARTICIPATING STATES

Transmission

- *Focus for action:* We recognize that many efforts are underway to address various aspects of the transmission challenge, therefore it is important that state legislatures identify appropriate partners and focus on areas where they can make a difference.
- *Options discussed include:*
 - Legislative direction to PUCs;
 - Taking regional considerations into account in rate making;
 - Hold regional fact-finding hearings;
 - Streamlining permitting procedures within individual states;



OPPORTUNITIES FOR LEGISLATIVE ACTION AND COOPERATION AMONG PARTICIPATING STATES

Transmission (continued)

- *Options discussed include:*
 - Bundling to meet RPS;
 - Rate implications of renewable energy credits (e.g. bundled, unbundled);
 - Interstate process to better coordinate siting of transmission lines; and
 - Influencing Federal agencies and policy
 - Land management agencies (e.g. siting practices)
 - Federal Energy Regulatory Commission (FERC)

