

SB 123 Opportunities for Alaska



House Committee on Energy
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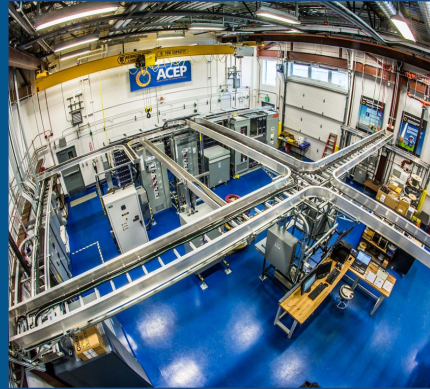
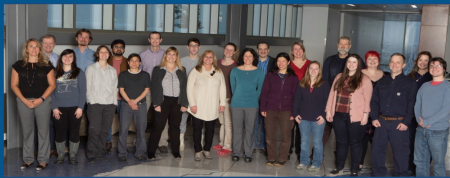


Good morning. Thank you for this opportunity to testify. My name is Steve Colt. I am a research professor with the Alaska Center for Energy and Power at the University of Alaska Fairbanks. I am an economist by training and prior to joining ACEP I worked for more than 30 years at the Institute of Social and Economic research – ISER – at UAA. I will offer some very brief remarks on how the RCA might approach its reliability and IRP subdockets to implement SB 123. Then, I will introduce the Regulatory Assistance Project. Your questions are welcome at any time. I'd like to emphasize that my remarks are my own, and don't represent the views of ACEP or the university.

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Mission: Fostering development of practical, innovative and cost-effective energy solutions for Alaska and beyond

- ❖ Applied energy research program
- ❖ Technology testing & optimization
- ❖ Energy systems modeling & analysis
- ❖ Knowledge network creation
- ❖ Commercializing energy innovation



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ACEP is a team of more than 30 professionals at UAF, including our talented undergraduate and graduate students. ACEP works to promote cost-effective energy solutions for Alaska.



ACEP has a great network of partnerships. We try to know what we don't know, and then we try to link up with those who do have knowledge and know-how to share. Thus, we are delighted that Regulatory Assistance Project is with us today as a partner.

What should RCA consider as it sets rules for reliability stds and integrated resource planning?

1 question about reliability,
and
3 questions about
Integrated Resource Planning
for Alaska
in the 21st Century



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What should RCA consider as it sets rules for reliability standards and integrated resource planning?

I suggest 1 question about reliability (of course there are many more), and 3 questions about IRP.

1. How should Alaska's "reliability" standards address "resilience" ?

Earthquakes,
Wildfires,
Transmission outages
Fuel supply cut-offs...
all while Cold,
and Dark



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"Resilience" may not be the same thing as "reliability," especially in Alaska. I look forward to hearing what others might have to say about this.

What should RCA consider when setting rules for IRP?

1. What is a resource?
2. How can we integrate?
3. What is planning?



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Here are three more questions. These are about the IRP process.

“Integrated Resource Planning” came into vogue in the 1980s, so it grew up in the 20th century. It’s our job to properly adapt it for the 21st century and to Alaska.

1. What is a resource...

Generation

Thermal, Hydro

Wind, solar, biomass, hydrokinetic, nuclear...



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The 20th century IRP focused on generation.....

.....and helped us integrate renewables into the supply mix.

1. What is a resource...

Generation



Transmission
Distribution
Storage



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The 21st century IRP has evolved to recognize transmission, distribution, and most recently storage as center-stage resources along with traditional generation.

“Today, new technologies, changing market conditions, and new environmental regulations are making IRPs change with the times.” – *Advanced Energy Economy*.
<https://www.aee.net/about/aee>.

1. What is a resource...

Generation

Transmissi

Distributio

Storage

Loads



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Flexible loads like EV's and heat pumps are coming on strong.

Flex loads can provide storage and beneficial use that helps consumers and the grid. To unlock their potential, flexible loads must be networked into the system and controllable. “Control” can be direct, but it can also be indirect via prices and information.

Flex loads can be good for rates, good for the economy, and good for business – and a good IRP process can help ensure these outcomes.

In other words,
It's the network, stupid!



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Considering all these resources together, we might say “It’s the network, stupid!” – Anything that helps the network in a cost-effective way is a potential resource that should be included in the IRP process.

1. What is a resource...

People



I saved the most important resource for last. *People* have always made investment and consumption choices that determine electric loads. Going forward, people will become an even more important grid resource acting as consumers, producers, buyers, sellers, and stewards of electric energy. (The people in this slide include Juneau EV owners, Jenn Miller and Chris Colbert of Renewable IPP, and participants in the ACEP utility intern program.)

People can bear risk;

People make decisions that create, shape, and shift loads;

People can choose to produce electricity; - so what is the strategy for going beyond net metering to embrace this?

People supply investment capital;

People help each other in emergencies

Example:

Mary Barra (GM) is partnering with Cathy Zoi (EVgo)

General Motors (GM) and EVgo, an electric vehicle (EV) charging station provider, [announced Friday](#) an effort to add 2,700 public fast charging stations in 40 metropolitan areas over the next five years.

"We thought the partnership with EVgo provides a great opportunity to accelerate that robust charging network, which will support customers as they convert to EV vehicles," Barra added.

<https://www.utilitydive.com/news/gm-evgo-to-triple-fast-charging-network/582787/>

2. How can we integrate resources?

“Quantities”:

What, when, where to build



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Question 2: how do we integrate

The 20th century IRP focused on quantities: What should vertically-integrated utilities build? When? Where? The answers made for a “Capacity Expansion Plan.”

But,

In economics, “Prices vs Quantities” is shorthand for the eternal debate about how to organize economic activity. The “Quantities” idea goes with “planned economies” and “command-and-control,” while the “Prices” idea goes with market systems, price signals, and free choice.

2. How can we integrate resources?

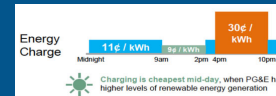
Quantities

What, when, where to build

but also

“Prices”:

incentives – markets – mechanisms
to empower users - buyers – sellers –
innovators



Dominion reaches agreement on South Carolina renewables + storage tariff to better integrate resources



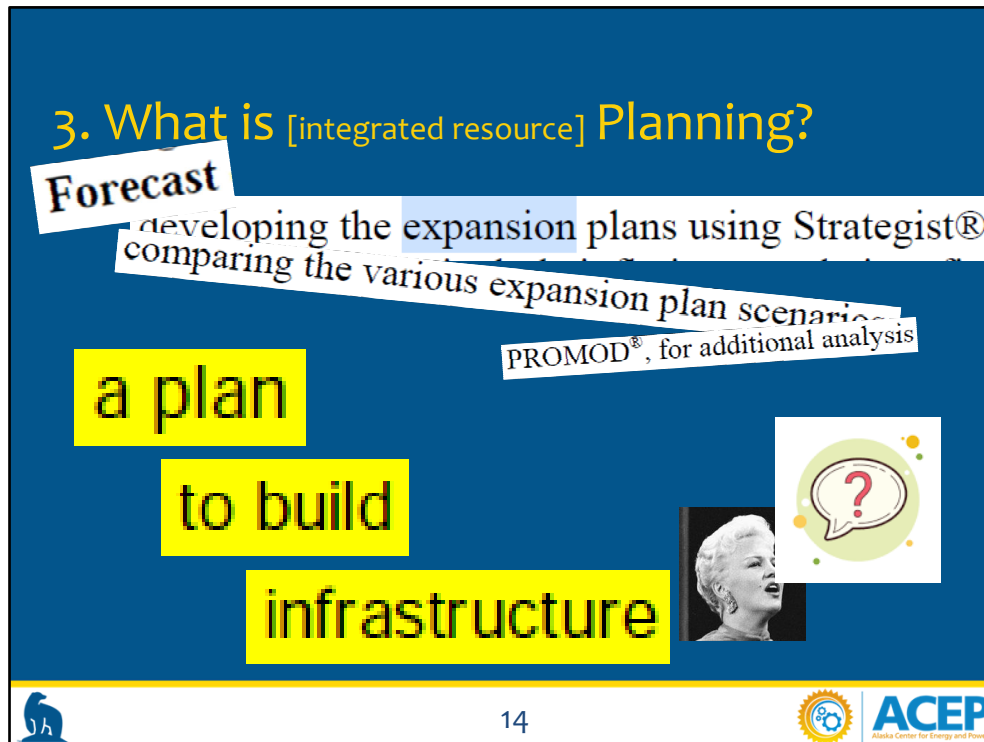
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In the 21st century, prices and price signals are taking center stage in electric systems. Wholesale power markets now serve 70-80% of the U.S. population. These markets use price signals and voluntary contracts to integrate resources. In Alaska, which retains regulated vertically integrated utilities, we can use the IRP process to promote the “Prices” approach to integrating and coordinating resources. By emphasizing incentives, markets, and mechanisms, we can harness private decision-making and the private sector. We can empower people in their roles as consumers, buyers, sellers, and innovators. The people at CIRI did not build Fire Island Wind because they were told to.

“Dominion Energy South Carolina has filed a proposal with the state's Public Service Commission (PSC) for a tariff that will apply to storage-plus-renewables generation facilities, with an eye toward better integrating intermittent solar in its system.”

<https://www.utilitydive.com/news/dominion-reaches-agreement-on-south-carolina-renewables-storage-tariff-to-b/583093/>



Finally, the 20th century IRP process featured technocrats using snazzy computer models. As these clippings from Alaska's last IRP show, the result was a plan, to build, stuff. But as the singer Peggy Lee asked in her famous song of the same name: "Is that all there is?"

3. What is [integrated resource] Planning?

More than **a plan** **to build** **infrastructure**

- An ongoing, transparent process
- Iterative and adaptive
- Looks for shared goals using shared data
- Develops effective mechanisms to achieve goals
- Provides criteria for assessing projects and schemes
- Keeps people front and center

Data is a resource,
too!



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For the 21st Century, Integrated Resource Planning must be more than a just a plan to build stuff. What should the IRP process *be* and what should it *do*? I made a bullet list just to promote discussion:

For the record: IRP can be:

- An ongoing, transparent process
- Iterative and adaptive
- Looks for shared goals using shared data
- Develops effective mechanisms to achieve goals
- Provides criteria for assessing projects and schemes
- Keeps people front and center

More ideas – they are not new!

IRP can:

Promote a portfolio of diverse resources.

Create and not foreclose options. Examples: Dual-fuel turbines, regulation capability, and transmission.

Enable customer discovery - what do people want and what are they willing to pay for it.

Focus on the integration mechanisms and network-ability of the resources, many of which are emerging or even unknown.

Encourage pilots and experiments

Reward beneficial electrification – building good loads

Empower multiple parties to share and manage risk, including fuel risk

Regulatory Assistance Project



Sustainable Energy Solutions for Rural Alaska

Beneficial Electrification (BE) - Three Conditions



1. Saves Customers Money Over Long-Term



2. Reduces Environmental Impacts



3. Enables Better Grid Management

What's special about EV charging?



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Alaska EV Workshop

<http://acep.uaf.edu/outreach-education-publications/lectures-workshops/alaska-ev-workshop.aspx>


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I'll now conclude by introducing the **Regulatory Assistance Project**. **RAP professionals are no strangers to Alaska**. David Farnsworth was a lead author of "Sustainable Energy Solutions for Rural Alaska." It's an excellent summary of challenges and opportunities off the road system. Just weeks ago, David and his colleague Mark LeBel gave talks at the Virtual Alaska Electric Vehicle Workshop co-hosted by ACEP and the U.S. Arctic Research Commission. ACEP reached out to RAP because these guys know their stuff about best practices and the state of play with respect to reliability standards and IRP processes. I'm eager to hear from them.



Thank you

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