



**RAP**

Energy solutions  
for a changing world

# Integrated Resource Planning: an Introduction

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Alaska House of Representatives  
Special Committee on Energy

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**The Regulatory Assistance Project**

Regulatory Assistance Project (RAP)<sup>®</sup>

China

European Union

United States

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# IRP – Complex, yes



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# Still, no need to drink from a fire hydrant

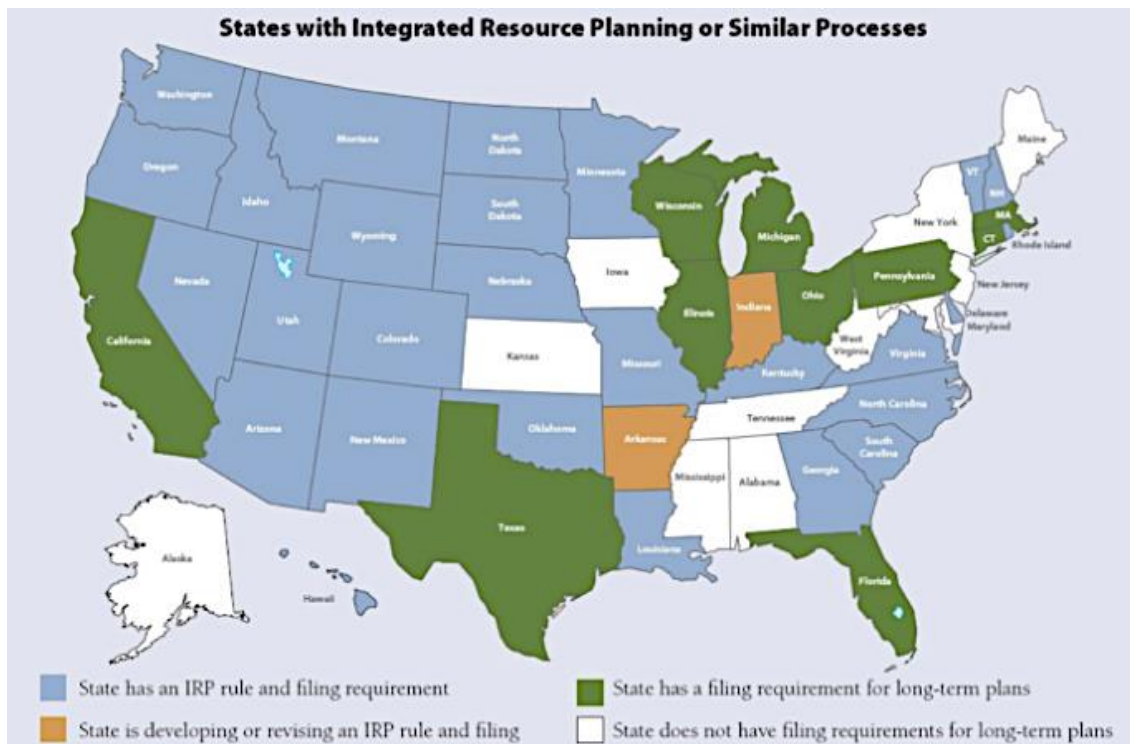


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# Where Does IRP Come From?

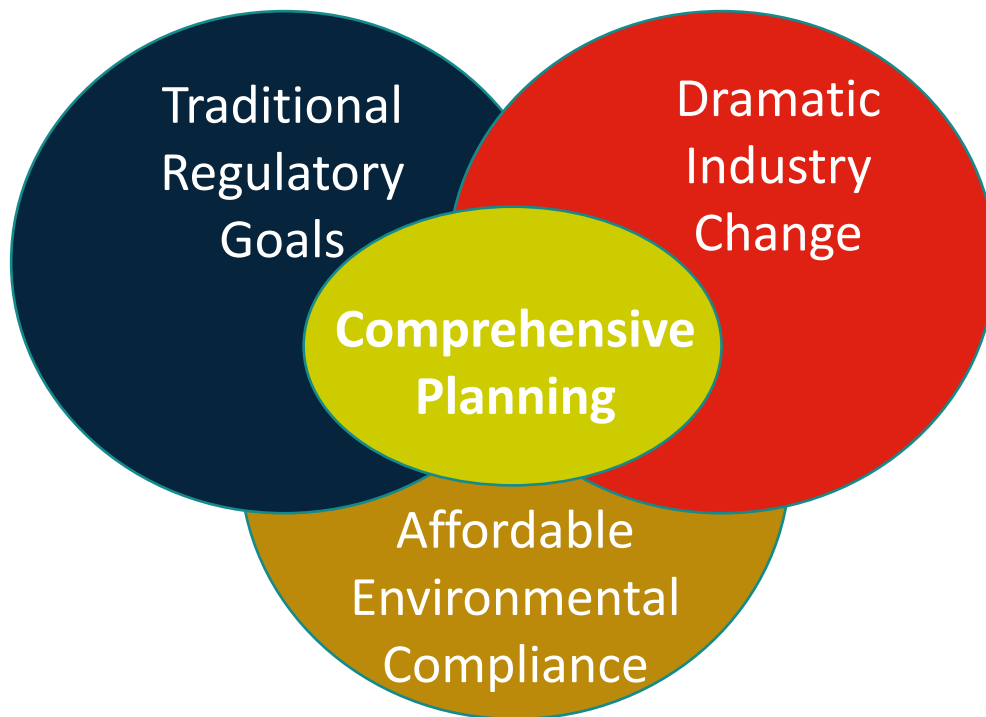
- Late 1970's
  - Huge cost overruns on coal and nuclear units
  - Delays in in-service dates created shortages
  - Price increases made energy efficiency an attractive option
- 1979 Three Mile Island accident
  - 60 nuclear units canceled

# About 30 States Have Some Form of IRP



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# Today's Utility/Regulatory Challenge



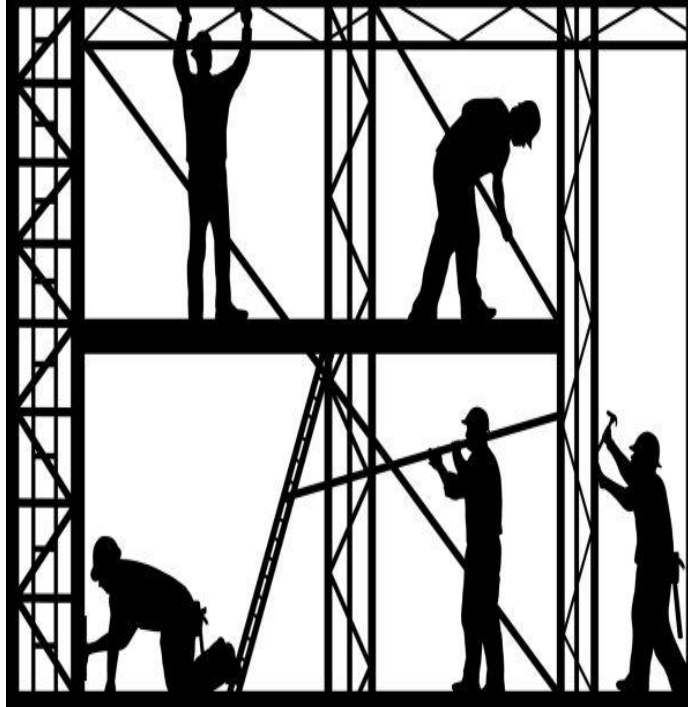
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# What is IRP

A plan for meeting the public's need for energy services that incorporates supply- and demand-side resources in a technology-neutral manner to identify least-cost futures under a given set of constraints.

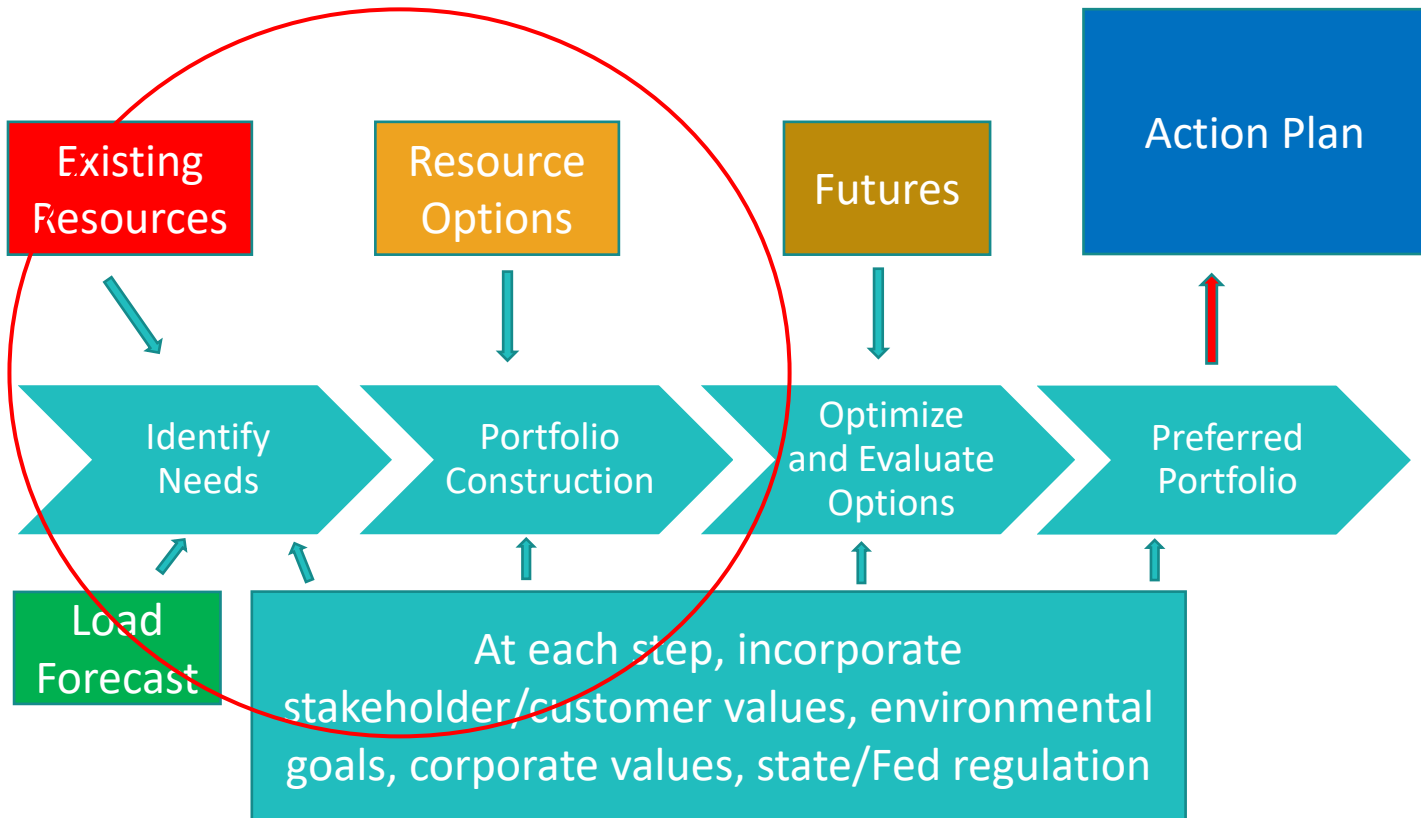
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# IRP– Structure





# IRP



# Options for Consideration in Meeting Forecasted Energy Needs

- Energy Efficiency
- Demand Response
- Combined Heat and Power Opportunities
- Renewable Energy
- Power plant upgrades that increase the capacity or extend the life of an existing unit
- Construction of new capacity

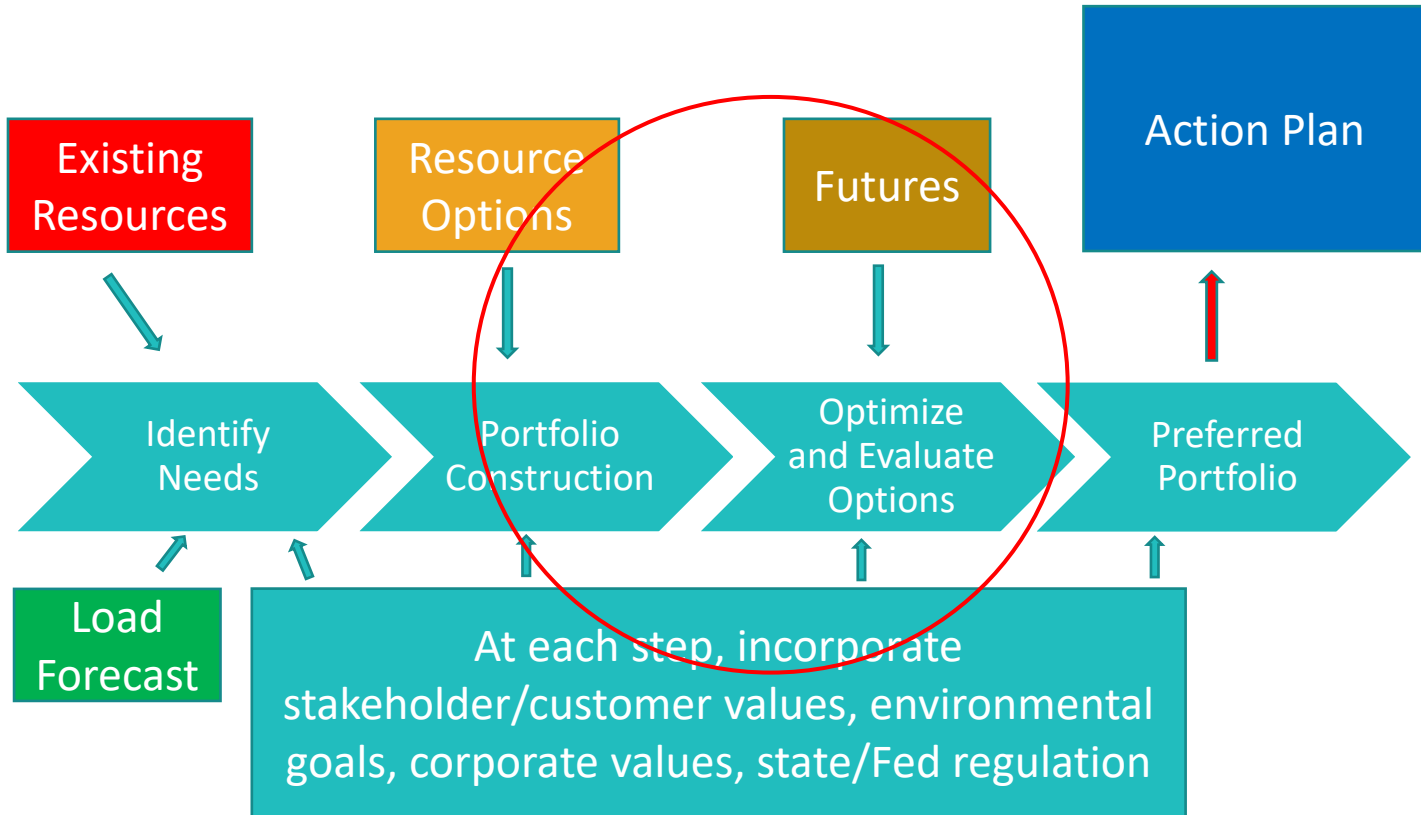
Each option should be examined in terms of meeting reliability needs throughout the planning horizon and doing so in a least-cost manner.

# What about electrification?



*Brattle: “Utility sales could nearly double by 2050”!*

# IRP



# NOW--With all that Information? You Integrate *Supply and Demand*

Large utility  
IRPs include  
significant  
computer  
modeling for  
***portfolio  
optimization***



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## What About Risk?

Risk cannot be eliminated, but it can be managed

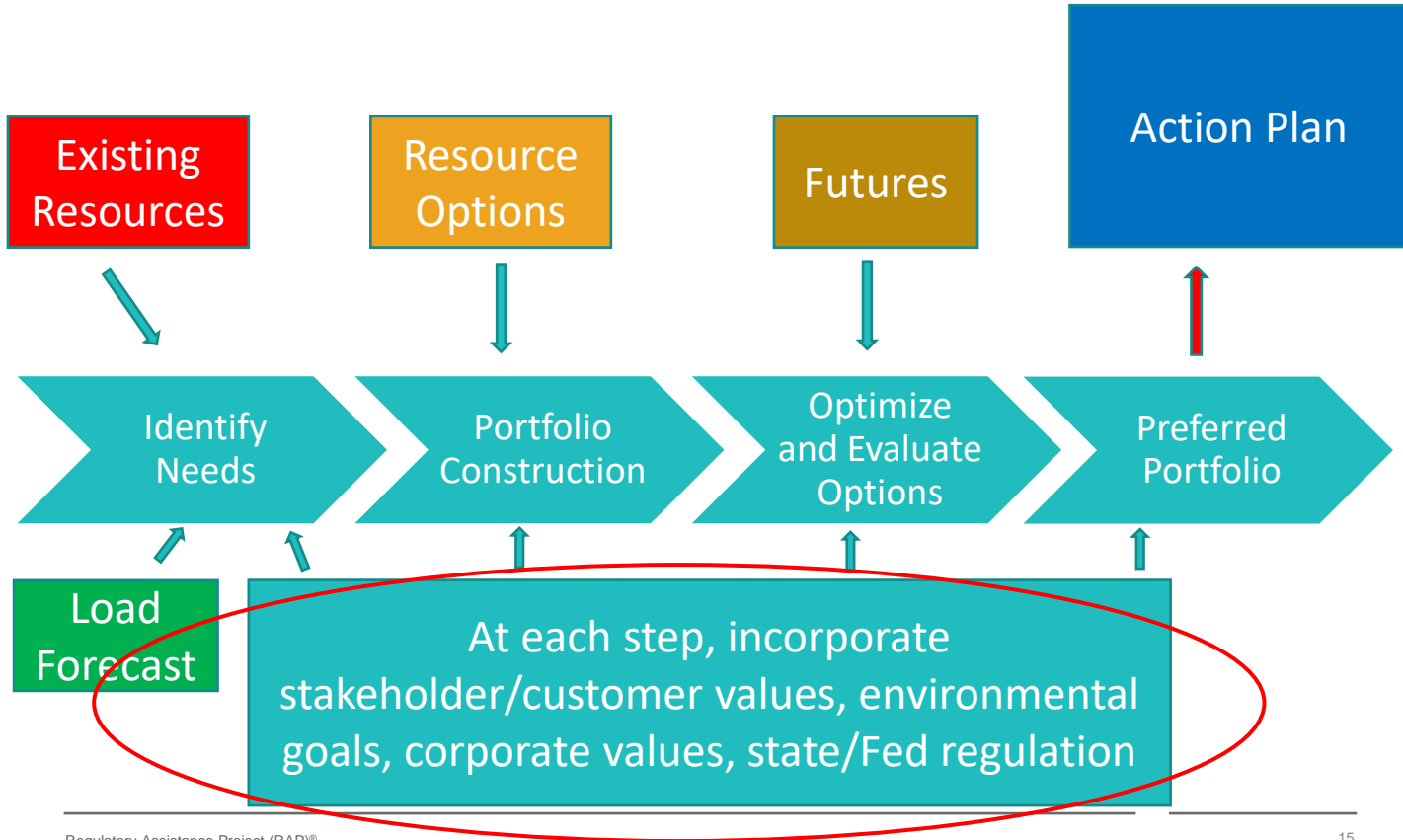
- Risk is defined in terms of *probabilities*, so sooner or later some risks will be realized, and will translate into \$.

Non-Strategies

- Ignoring risk
- “It’s always been done this way”

Make a fresh assessment of risk and attempt to limit it.

# IRP

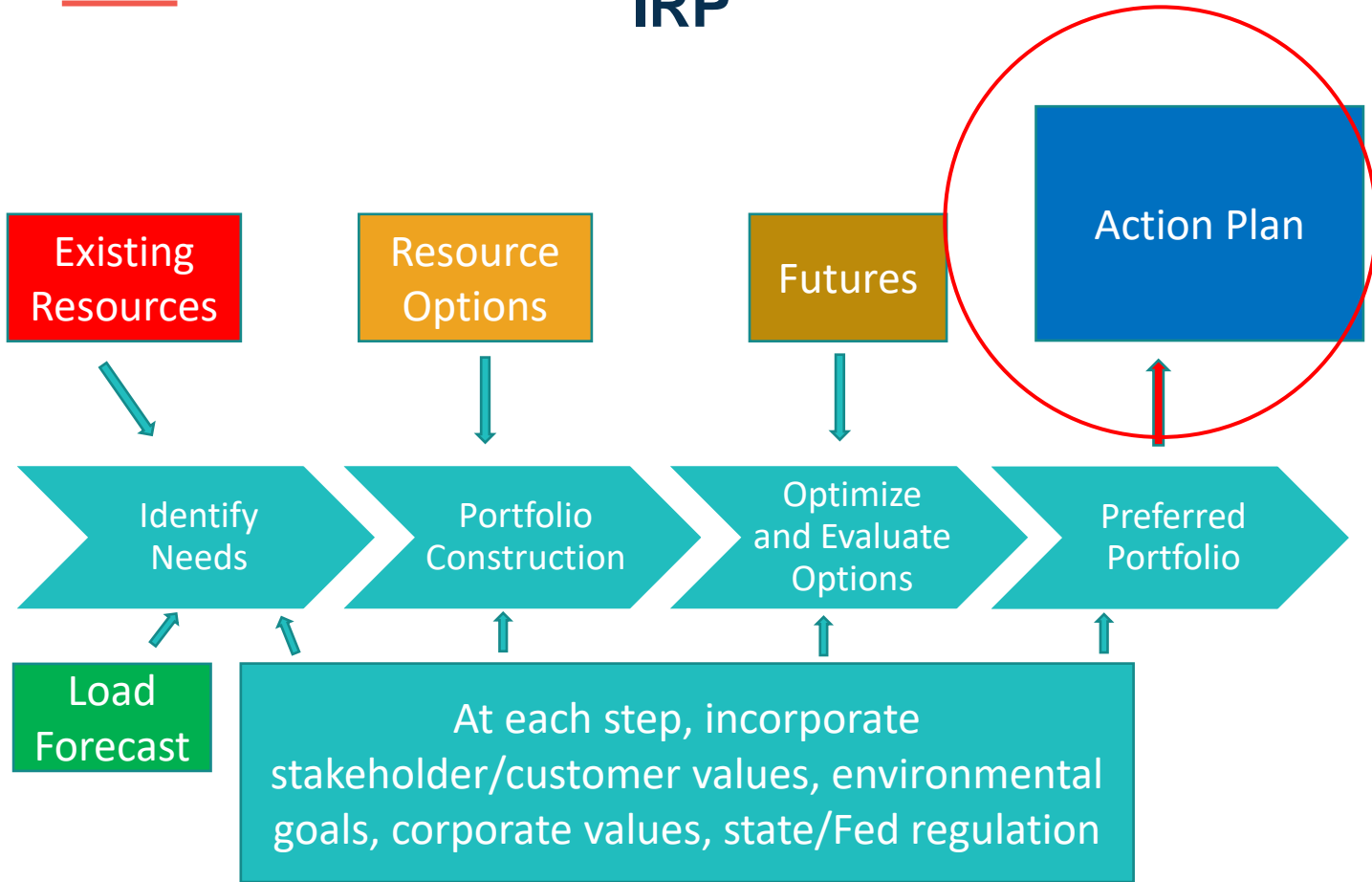


# Public Participation – opportunity to educate and build support and constituencies





# IRP



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# ***An Action Plan***

Even though IRPs look out over 20-30-year horizons, they also should have an *action plan* that describes what should happen in the near term – the next several years.

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# IRP

- A useful tool for understanding electricity systems and preparing them for the demands of state economies including electrified transportation and an increased shares of renewables.
- Relevant in centrally managed power systems or where power generation and transmission require co-ordination across multiple jurisdictions.

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# IRP

- Helps manage risk and encourages timely and efficient investment,
- IRP can help to optimize decision-making, especially amid rapid technological innovation that involves trade-offs over resource and risk allocation.

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# IRP

- Effective planning depends on:
  - Sound regulatory oversight;
  - Comprehensive institutional processes;
  - Alignment with other public policy goals;
  - Timely data, and
  - Stakeholder consultation.



***Plans are worthless,  
but planning is everything***

**President Dwight D Eisenhower, 1957**

# About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at [raponline.org](https://raponline.org)



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