Arizona Planning/Procurement Practices

Summary: Arizona just recently resumed a planning/procurement practice after a break of about 17 years, related to restructuring efforts. Both major utilities – Arizona Public Service and Tucson Electric Power filed plans in April of this year. Arizona also recently adopted a fairly significant energy efficiency requirement (22% of load by 2020) and has renewable targets as well. An unusual feature of the practice is the requirement that utilities file a "work plan" the year prior to when the plans are due, detailing planned public participation among other things. Competitive bidding is preferred but there are broad categories of allowed exceptions. If a utility uses competitive bidding, it must retain an independent monitor.

Planning Category	Description
Standard/Goals	• Select a portfolio of resources based upon comprehensive consideration of a wide range of supply- and demand-side options that will: ○ result in the load-serving entity's reliably serving the demand for electric energy services; ○ address the adverse environmental impacts of power production ○ meet renewable, DG, and EE targets ○ effectively manage the uncertainty and risks associated with costs, environmental impacts, load forecasts, and other factors ○ achieve a reasonable long-term total cost, taking into consideration the objectives set forth in subsections (F)(2) through (7) and the uncertainty of future costs • Acknowledgement standard is "reasonable and in the public interest" with a number of specified factors, including total cost of electric service, flexibility to respond to unforeseen changes, fuel and delivery reliability, environmental impacts, consideration of all relevant resources, risks, and uncertainties, "in the best interest of its customers", "best combination of expected costs and associated risks", and coordinated with other utilities • Various portions of rules require a plan that: ○ considers using a wide range of resources and promotes fuel and technology diversity ○ factors in the delivered cost of all resource options, including costs associated with environmental compliance ○ increases the efficiency of the utility's fossil fueled generation ○ reduces environmental impacts and water consumption ○ manages errors, risks, and uncertainties
Participation	Yes
Duration	15 year
Required Components	Exemptions are available from any IRP or procurement requirement– benefit/cost test applied
• Load forecast	• 15 year forecast, w/ and w/o DSR • Every year – detailed data for past year and 10-years' data at higher level

• SSR evaluation	• Projected data on all current resources (including future O&M costs) and wide range of future options (w/ and w/o self-gen); including cost of compliance with environmental regulations, detail on any resources rejected, and costs of self-gen • Every year – detailed data on all existing sources (including self-gen) and system ops, including any energy purchased not under RFP
• DSR evaluation	Robust, including measures rejected
• T&D	All new or refurbished T&D facilities, including why needed
• Rate spread/design	No
• Modeling	• Must include a calculation of the benefits of generation using renewable energy resources and analysis of integration costs • Staff may ask for additional analyses
• Risk and uncertainty	• Analyses to identify and assess errors, risks, and uncertainties • Analysis of available means for managing errors, risks, and uncertainties such as obtaining additional information, limiting risk exposure, using incentives, creating additional options, incorporating flexibility, and participating in regional generation and transmission projects
• Externalities	May go beyond costs of compliance with existing regulation
• Action Plan	Covers three years post-acknowledgement: • Summary of actions to be taken on future resource acquisitions; • Details on resource types, resources capacity, and resource timing
• Other	Filed in the years prior to year plan is due, a work plan that specifies: • Outline of contents of the next plan • Method of assessing resource options • Sources of assumptions • Outline of timing and extent of public participation
Formal Review Process	• Staff has 6 months to review and prepare comments; Commission order four months thereafter • Timing can be extended if Commission decides to hold hearing or workshop
Ratemaking implications of planning	• Considered in ratemakings and other proceedings • “A load-serving entity may seek Commission approval of specific resource planning actions”
Timing	• Every even year (but some information filed every year); first plans were in 2012 • In odd years, utility files a “work plan” for the upcoming IRP
Procurement Category	Description
Competitive bidding requirements	• “Shall use an RFP process as its primary acquisition process for the wholesale acquisition of energy and capacity, unless an exception applies, including emergencies, planning horizon less than 2 years, genuine unanticipated opportunity providing unique value, or meeting RPS or EERS • Broad range of permissible approaches for acquisition of wholesale energy, capacity, physical hedging

Independent Monitor	• Utility shall engage for all RFP processes for procurement of new resources; may retain anyone qualified by Staff and pays them (may charge bidders a reasonable fee to cover or request in rates) • IM will provide status reports to Staff as requested • Utility consults with Staff on vendor list; top 3-5 posted for comments; Staff decides who is qualified
Bid solicitations	Utility must provide IM with copy of any self-build/own proposal one week prior to when bids are due – IM will secure and ensure no one sees until appropriate
Bid evaluations	No requirements
Ratemaking pre-approval	No
Energy cost tracking	Yes

State Comparability Assessment

Attribute	Arizona
Population (2005; 2011) • Overall • % urban	 • 5,952,000; 6,483,000 • 87.6 %; 89.5% urban
Generation • Summer net capability 2010 ○ IOU ○ IPP • Annual generation 2010 ○ IOU ○ IPP • IPP share of gen in 2000 • IPP share of gen in 2010	 • 26,392 MW ○ 20,115 MW ○ 6,277 MW • 111,751 GWhrs ○ 91,233 GWhrs ○ 20,518 GWhrs • 1.1% MW; 0.9% GWhr • 23.8% MW; 18.4% GWhr
Electricity Load • Average annual ○ 2000 ○ 2010 ○ Average annual change	 ○ 61,130 GWhrs ○ 72,833 GWhrs ○ +1.8%
Electricity retail revenue • Average annual ○ 2000 ○ 2010 ○ Average annual change	 ○ $4,431 M ○ $7,059 M ○ +4.8%
RPS	Yes – 15%, 2025 (30% DG)
EEPS or other standards	Yes
Member of organized market?	No

Residential market characteristics	
• Space heat?	• 38% natural gas; 54% electricity
• Per capita gas use per degree day	• Just below Nat'l median – rank 27th
• Per capita electricity use per degree day	• Lowest in U.S. – rank 50th
• Prices compared to national average	• Above average: 9.73¢/kWh - relative decrease since 1990 from 118.0% to 97.4% of Nat'l average

Colorado Planning/Procurement Practices

Summary: Colorado significantly revised its planning and procurement practices following significant legislation in 2006-2007 and a shift in the resource selection responsibility to the Commission. Under the practice now, the first phase of planning sets the framework (need, modeling assumptions and scenarios, procurement specifications) for the Commission's selection of a preferred resource portfolio in the second phase. In the second phase, the utility and an independent evaluator perform optimizing system model runs, using bids made in an all-source competitive bidding process. The Commission makes its selection by weighing various risks and benefits. At the end of the last full planning/procurement processes, the parties all complained about the burdensome nature of the processes.

During the first and most recent full process under these rules (concluding in a 2009 order), Public Service of Colorado (an Xcel utility – PS below) proposed to acquire almost 2000 MW of new resources, resulting from the closure of two older coal plants plus significant expected load growth. The Commission selected a portfolio and decided that, because both utility ownership and independent resources were important options, the utility's proposal to acquire resources such that 40-60 percent would be utility-owned was appropriate. As of 2012, the utility's resource portfolio is approximately 60% owned. Because the NPVRR of the various portfolios were extremely close, the Commission selected the final resource portfolio on other considerations.

Planning Category	Description
Standard/Goals	• Purpose: to establish a process to determine the need for additional electric resources and to develop cost-effective resource portfolios to meet such need reliably • Policy: primary goal is to minimize NPVRR; also to give the fullest possible consideration to the cost-effective implementation of new clean energy and energy-efficient technologies
Planning period	• 20-40 years • Plan uses a "resource acquisition period" of 6-10 years (utility to specify) for various purposes, including the period of focus for the resource acquisition plan
Participation	Rules do not require but formal proceeding gets large participation no discussion in ERP of participation in plan preparation stages
Required Components	
• Load forecast	Detailed requirements including a comparison of current forecast to most recent prior plan forecast, and last 5 years' forecast to actual loads
• Evaluation of existing resources	Owned, purchased, and coordination; projected AF and CF; water requirements, remaining life/contract duration (including modification flexibility); projected emissions; EE installed or to be installed under approved program

• Transmission resources	• A 10-year transmission plan is a separate requirement, with its own rule • Includes all facilities 115 kV and above; current and proposed; required assumptions for evaluation and bidding purposes; include cost as part of any resource not competitively bid • Plans contain extensive information on transmission
• Reserve margin	• For resource acquisition period, plans must include multiple load and risk considerations • Base case for the entire planning period • Must include a confidential contingency plan for the resource acquisition period in case load exceeds resources
• Need assessment	• Made in consideration of RPS and EE requirements • Projected EE may reduce amount that must be acquired through competitive bidding
• SSR evaluation	• Because resource planning and procurement is oriented around a competitive bid, plans do not consider an exhaustive set of possible resources • Plans look at cost and operating characteristics and do some portfolio work. The all-source solicitation provides the resources that will be tested in optimization
• Procurement documents	Plan must include: • Bid policies (assumptions, criteria, models); • RFP • Model contract(s); • Method of assessing qualitative factors Parties can comment on all of this as part of the plan proceeding
• Independent Evaluator	• Commission hires an IE prior to the utility filing a plan, based on a joint recommendation by the utility, Commission staff and the consumer counsel • Utility pays the cost of the IE and trains the IE to run the utility's models • The IE's primary role is to support the Commission's decision-making process
• DSR evaluation	This happens in an entirely separate proceeding
• Distribution	Not part of planning effort
• Rate spread/design	Does not appear to be explicitly part of planning effort
• Modeling	• Preliminary modeling occurs in phase 1 and then extensive modeling in phase 2 to develop specific portfolio choices for Commission decision • PS uses the Strategist model
• Risk and uncertainty	• Commission considers various risks in choosing preferred acquisition portfolio • In 2011 plan, PS discussed risk and uncertainty at length
• Externalities	• In 2007 plan, Commission ordered PS to develop methods for the qualitative consideration of 3 externalities: economic development, resource diversity, and health effects of emissions • Anticipatable control costs are quantified in resource cost estimates

• Action Plan	• This is the utility's plan (bid or alternative) for acquiring the resources it needs, including the projected emissions and water needs for any resources it proposes to own and for any new generic resources included in the modeling • Action Plans must describe at least 3 alternates: ○ a base case that minimizes NPVRR ○ alternates that emphasize more renewable, EE, or demonstration/experimental resources
Formal Review Process	Commission approves, disapproves, or requires modifications overall and specific sections (if record permits); if other than approval, utility must file modified plan
Ratemaking implications of planning	A Commission decision specifically approving the components of a utility's plan creates a presumption that utility actions consistent with that approval are prudent; utility to present prima facie evidence of consistency; intervenors bear the burden of proof against this or showing changed circumstances timely known or knowable
Timing	• Every four years, with annual reports • Utility can request interim plan and various resource acquisitions are permitted that are outside of the whole process
Annual Reports	For 10 years; include updated: • forecast • assessment of existing gen resources • assessment of reserve margin & contingency • Assessment of need • Progress on acquisitions under the plan
Procurement Category	Description
Competitive bidding requirements/exemptions	• State policy is that all new resources should be acquired through all-source (including utility) bid solicitation • Exemptions include: ○ Less than 30 MW; ○ Less than a 2-year term; ○ Certain contract modifications; ○ Utility DSM programs (encouraged for these); ○ Interruptible service • Exceptions permitted but must fully explain and support with cost-benefit analysis; if the resource is to be utility-owned, it must file a CPCN and provide employment metric information • Commission may retain an IE to assist with evaluation of exceptions

Bid solicitations	These are filed with resource plan and must include: • Model contract for each type of resource including duration • Estimates of transmission costs • Description of resource need • Dispatch requirements • Discount rate • Planning assumptions • any other information necessary to implement a fair and reasonable bidding program Bidders must provide employment metrics
Bid evaluations	• Utility has 30 days to file a report summarizing responses and determination whether bid may not meet utility's needs • Utility has 45 days to decide whether to advance bids to computer modeling; if advanced, utility notifies bidder and explains how will model the bid and assumptions that reasonably relate to it; there is a process to resolve disputes about this
Report	The utility has 120 days to file, describing the cost-effective resource plans that conform to the range of scenarios for assessing the costs and benefits from increasing renewable or EE resources as specified in the Commission's decision approving or rejecting the utility plan and the utility's preferred plan if it differs
Process	Comments back and forth
Commission Decision	• Within 90 days after the utility's report, Commission must issue a decision approving, conditioning, modifying, or rejecting the utility's preferred cost-effective resource plan; this decision establishes the final cost-effective resource plan • The Commission weighs the public interest benefits of competitively bid resources along with those of resources owned by the utility as rate base investments; renewable energy resources; resources that produce minimal environmental impact; EE technologies; resources that affect employment and the long-term economic viability; contribute to Colorado's energy security, economic prosperity, environmental protection, and insulation from fuel price increases • During the recent PS case, the Commission ordered the IE to monitor the negotiations for final contracts
Resource ratemaking pre-approval	Not explicit
Energy cost recovery tracking	Yes

State Comparability Assessment

Attribute	Colorado
Population	About 5.1 million, 84% urban (2005) About 5.117 M, 86.6% urban (2011)

Generation
• Summer net capability
  ○ IOU
  ○ IPP
• Annual generation 2010
  ○ IOU
  ○ IPP
• IPP share of gen in 2000
• IPP share of gen in 2010
	
	• 13,777 MW
	  ○ 9,114 MW
	  ○ 4,662 MW
	• 50,720 GWh
	  ○ 39,600 GWh
	  ○ 11,100 GWh
	• 13.4%
	• 33.8% (most NG and wind additions)

Electricity Load
• Average annual
  ○ 2000
  ○ 2010
  ○ Average change
	
	•
	  ○ 43,020 MMWh
	  ○ 53,000 MMWh
	  ○ +2.1%

Electricity Revenue
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	
	•
	  ○ \$2.5B
	  ○ \$4.8B
	  ○ +6.7%

RPS	Yes
EEPS or other standards	Yes, 5% of 2006 sales by 2018
Member of organized market?	No
Residential market characteristics • Space heat • Per capita gas per heating degree day • Per capita electricity per cooling degree day • Prices compared to National average	 • 75% gas; 16% electric • Above Nat'l average – rank 16th • Above Nat'l average – rank 9th • Below average: 9.39¢/kWh - relative increase since 1990 from 89.6% to 94.0% of Nat'l average

Idaho Planning/Procurement Practices

Summary: Idaho's planning/procurement practice is a light-handed approach with few requirements. There are no rules, although a Commission order from the late 1980's (not available electronically) provides general guidelines. The most detailed requirements apply when a utility is using the recently enacted resource pre-approval process. Even this process, however, does not require competitive bidding; rather the utility must show that it has considered other sources besides the resource under consideration in the process.

Planning Category	Description
Standard/Goals	Per Idaho Power's (IP) latest IRP, the standard/goals are • Enough resources to reliably serve growing demand • Balance cost, risk, and environment • Equal, balanced treatment to SSR and DSR • Involve the public in a meaningful way
Participation	• The practice is that regular public workshops are part of the process • Meetings of IP's advisory group are open to the public
Required Components	
• Construct	Balanced consideration to SSR and DSR, compared using avoided cost methodology
• Duration	• 20 years (IP only started doing a 20-year plan in 2006) • IP does this in two 10-year pieces
• Load forecast	Yes, including uncertainty
• SSR evaluation	• Existing (including 5 years' operating statistics) and possible options (additional resource menu) • Encourages specifics, including of potential off-system purchases • Include estimates of potential QFs
• DSR evaluation	Yes – Conservation Analysis Plan
• T&D	• Included as relates to resource options; • Fairly extensive transmission discussion in IP 2011 IRP, both as SSR and stand-alone • Most recent IP plan features a transmission line as a prime resource option
• Rate spread/design	No
• Modeling	No explicit requirements
• Risk and uncertainty	Expected costs, reliability and risks in a range of scenarios
• Externalities	Yes, variety of approaches permitted
• Action Plan	Yes
Formal Review Process	Written comments
Ratemaking implications of planning	Accepted for filing only
Timing	Biennially for resource plans, annually for DSR plans

Procurement Category	Description
Competitive bidding requirements	No, although IP did use a competitive bid in process of selecting its Langley Gulch project as a new resource; in order granting pre-approval, the Commission indicated intent to open a process to look at competitive bidding
Bid solicitations	NA
Bid evaluations	NA
Resource ratemaking pre-approval	Yes – all aspects of ratemaking treatment may be decided in advance, including capital cost, depreciation, ROE Required showings: • Utility has in effect a commission-accepted IRP • Services and operations resulting from the facility are in the public interest and will not be detrimental to adequate and reliable electric service; • Utility demonstrates it has considered other sources for long-term electric supply or transmission; • Facility is reasonable compared to energy efficiency, demand-side management and other feasible alternative sources of supply or transmission; and • Utility participates in a regional transmission planning process The Commission used this process most recently for IP's Langley Gulch project, which saw considerable argument around the fairness of the competitive bidding process and for delay, given rising uncertainties. IP committed to a soft cost cap.
Energy cost recovery tracking	Yes

State Comparability Assessment

Attribute	Idaho
Population (2005; 2011 • Overall • % urban	 • 1,426,000; 1,585,000 • 37.5%; 66%

Generation
• Summer net capability 2010
  ○ IOU
  ○ IPP
• Annual generation 2010
  ○ IOU
  ○ IPP
• IPP share of gen in 2000
• IPP share of gen in 2010
	
	• 3990 MW
	  ○ 3,035 MW
	  ○ 955 MW
	• 12,025 GWhrs
	  ○ 8589 GWhrs
	  ○ 3435 GWhrs
	• 14% MW; 15% GWhrs
	• 23.9% MW; 28.6% GWhrs

Electricity Load • Average annual o 2000 o 2010 o Average annual change	 o 22,834 GWhrs o 22,798 GWhrs o -0.02%
Electricity retail revenue • Average annual o 2000 o 2010 o Average annual change	 o $953 M o $1492 M o +4.6%
RPS	No (although one applies to RMP and Avista in other states)
EEPS or other standards	Not explicit
PURPA activity	Yes, considerable: as of /31/11, IP had 127 PURPA contracts for 1190 MW nameplate of various QF facilities (bulk is wind); 91 were online, with 491 MW nameplate
Member of organized market?	No
Residential market characteristics • Space heat? • Per capita gas use per degree day • Per capita electricity use per degree day • Prices compared to national average	 • 45% NG; 34% electricity • Considerably below Nat'l average – rank 42nd • Considerably above Nat'l average – rank 8th • Below average: 6.48¢/kWh - relative increase since 1990 from 57.9% to 64.9% of Nat'l average

Michigan Planning/Procurement Practices

Summary: Michigan has a mixed competitive/regulated electricity industry structure. Choice exists, but the amount of load that can choose alternate suppliers is limited. The state recently resumed planning as part of legislation establishing renewable energy and energy efficiency targets and applying to new generation. Utilities prepare up to three separate plans: a renewable energy plan (REP), an energy optimization (EO) plan for energy efficiency and demand response, and an IRP that utilities must file to obtain various certificates regarding need and ratemaking treatment. The table differentiates by the type of plan. While final rules are in place for REP and EO filings, the IRP rules are still draft. Only one IRP filing has been made so far and that is a very recent one by Indiana-Michigan Utilities relating to a major life extension project at the Cook nuclear plant.

Planning Category	Description
Standard/Goals	REP: yes – costs reasonable and prudent and life-cycle costs (net of EO plan savings) less than cost of new conventional coal-fired generation EO : yes, costs reasonable and prudent and meet system resource cost test IRP: not explicit
Participation	Encouraged for REP, EO; nothing explicit for IRP Note: to date, only one "IRP" filing, by Indiana Michigan for major life extension/upgrade at existing nuclear plant. Just filed . . . no process yet
Required Components	
• Load forecast	REP: Yes, sales for 4 years and customer count for 20 years for purpose of calculating surcharges EO : Same as REP IRP: Yes, "long-term"
• SSR evaluation	REP: No, although plans tend to look at types of available renewable resources EO : No IRP: Yes, although complete review not required, may refer to REP
• DSR evaluation	REP: No EO : Yes IRP: Yes, may refer to EO Plan but not limited to the amount required under law and must address load management and demand response
• T&D	REP: No, only in connection with looking at cost of compliance EO : No IRP: Yes, including economic impact of import/export
• Rate spread/design	REP: No EO : No IRP: No
• Modeling	REP: No explicit requirements EO : No explicit requirements IRP: No explicit requirements
• Risk and uncertainty	REP: No explicit requirements EO : No explicit requirements IRP: Yes, including potential changes in laws, scenarios to test critical assumptions

• Externalities	REP: No EO : No IRP: No, except as implicit in risk/uncertainty
• Action Plan	REP: Yes, oriented to compliance with the standard EO : Yes, oriented to compliance with the standard IRP: Yes, showing "best" plan to meet the identified need
• Other	NA
Formal Review Process	REP: Yes, MPSC must approve plan making specific finding that is reasonable and prudent and meets "coal plant" cost test EO : Yes, MPSC must approve plan making specific finding that is reasonable and prudent and meets system resource cost test IRP: Yes, because is in connection with receiving various "certificates"
Ratemaking implications of planning	REP: MPSC action approves surcharges, prudence of plans, individual contracts EO : MPSC action approves surcharges, prudence of plans IRP: MPSC approval secures prudence, need findings
Timing	REP: one-time, updates, changes as necessary EO : one-time, updates, changes as necessary IRP: as necessary because of request for certificate
Procurement Category	Description
Competitive bidding requirements	Yes, in connection with REP, at least 50% must be non-utility owned and be acquired via RFP
Bid solicitations	• Utility required to maintain a list of qualified bidders • There are various requirements for what must be in RFP • Evaluation criteria need only be provided to bidders submitting notice of intent to bid
Bid evaluations	Fairly flexible with utility, provides for after-the-fact audit
Resource ratemaking pre-approval	Yes, through certificate process requiring an IRP. Available certificates include that: • The power to be supplied by a resource or contract is needed; • The size, fuel type, and other design characteristics of the existing or proposed electric generation facility or the terms of the power purchase agreement represent the most reasonable and prudent means of meeting that power need, considering both cost and risk • The cost of the resource or contract will be included in rates The Commission also approves all contracts and resources acquired under the REP, including EPC contracts.
Energy cost recovery tracking	Yes

State Comparability Assessment

Attribute	Michigan
Population (2005; 2011) • Overall • % urban	 • 10,090,554; 9,876,000 • 82.4%; 81.3%

Generation
• Summer net capability 2010
  ○ IOU
  ○ IPP
• Annual generation 2010
  ○ IOU
  ○ IPP
• IPP share of gen in 2000
• IPP share of gen in 2010
	
	• 29,831 MW
	  ○ 21,639 MW
	  ○ 8,192 MW
	• 111,559 MMWhrs
	  ○ 89,667 MMWhrs
	  ○ 21,884 MMWhrs
	• 11.7% (14% energy basis)
	• 27.5% (195 energy basis)

Electricity Load
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	
	  ○ 104,772 MMWhrs
	  ○ 103,649 MMWhrs
	  ○ -0.1%

Electricity retail revenue
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	
	  ○ 7,449 M
	  ○ 10,245 M
	  ○ +3.2%

RPS	Yes
EEPS or other standards	Yes
Member of organized market?	Yes - MISO
Residential market characteristics • Space heat? • Per capita gas use per heating degree day • Per capita electricity use per cooling degree day • Prices compared to national average	 • Natural gas 78%, electricity 7% • Considerably above Nat'l average – rank 5th • Just below Nat'l median – rank 26th • Above average: 10.37¢/kWh - relative decrease since 1990 from 108.1% to 103.9% of Nat'l average

Montana Planning/Procurement Practices – "Old"

Summary: Montana's original IRP rules resemble those of other states enacted around the same time. The explicit mention of plant abandonment is rare, however, as is the explicit acknowledgement that the costs of planning, including resource options, is recoverable. Also somewhat uncommon is the rules' mention of rate design as an option to consider, although later versions of rules often refer to demand response, which one could accomplish through rate design.

Planning Category	Description
Standard/Goals	• Efficient utility operations, efficient use of utility services, and efficient rates • Encourage utilities to acquire resources in a manner that will help ensure a clean, healthful, safe, and economically productive environment • Meeting the requirements of its customers in the most cost-effective manner consistent with the public utility's obligation to serve and at the lowest total cost while remaining financially sound • Efficiently allocate society's resources to the provision of electricity services and ensure just and reasonable rates for consumers • Suggest ways to reduce and manage the risk of resource choices to customers, shareholders and society • Best balance of: ○ Minimizing cost to society ○ Minimizing costs of risk not in formal cost analysis ○ Minimizing environmental and other external costs ○ Maintain economical levels of service reliability ○ Distributing costs and benefits equitably
Participation and communication	• Documentation thorough and capable of being understood • Commission meeting to receive comment required • Consumer Counsel must review • Broad participation encouraged: ○ Stakeholders ○ Persons with other than utility expertise ○ Utility internal: finance, demand forecasting, demand- and supply-side resource evaluations, and other relevant areas
Duration	Not specified; MDU does 20 years with 5-year Action Plan
Required Components	
• Load forecast	Yes; no forecast risk transferred to ratepayers
• SSR evaluation	• Evaluate a broad range of options and weigh attributes (MDU's analyzes select resources) • Could include resource abandonment
• DSR evaluation	• Continually monitor and develop data on cost-effectiveness • up to 115% of long-term avoided cost until market barriers and failures eliminated
• T&D	Transmission

• Rate spread/design	Explicitly recognize and use rate design to yield DSR – this is generally not in MDU's plans
• Modeling	• Weigh, rank, size and evaluate options based on multiple resource attributes, including ○ Direct and external costs ○ Cost of acquisition ○ Overall efficiency ○ Cost-effectiveness
• Risk and uncertainty	• Many sources of risk regarding market characteristics and options for supply • Plan should consider risk management techniques ○ Resource options with scheduling flexibility ○ Small, short lead time ○ Diversification ○ Load management
• Externalities	Externalities are imposed on society but not directly borne by producer and not accounted for in production costs and pricing • Quantify what is possible and consider unquantifiable costs in multiple attribute evaluation • Assess uncertainty and risk associated with future environmental regulations • Account for externalities of transmission facilities
• Action Plan	Yes; MDU does a two-year Action Plan
Formal Review Process	• Written comments within 30 days following submission • Hearing for oral comments not later than 60 days after written comments
Ratemaking implications of planning	• Explicitly not pre-approval; outcome of the planning process and particular investment decisions are utility's • Recovery of prudent planning and portfolio development costs
Timing	Every odd year on March 15
Procurement Category	**Description**
Competitive bidding goals	• Important to overall IRP process and efficient resource acquisition • Competitive solicitations provide valuable information on available SSR and DSR and their costs • Test the market before acquiring new resources • All-source solicitation favored (DSR and SSR), including utility resources up for consideration (MDU plans to issue all-source RFP in 2012 to start the next planning cycle)
Competitive bidding requirements	NA
Bid solicitations	NA
Bid evaluations	NA
Resource ratemaking pre-approval	No
Energy cost recovery tracking	NA

Montana Planning/Procurement Practices – “New”

Summary: Montana’s newer IRP and procurement rules reflect both the time at which they were adopted and the particular statutory requirements to which the rules apply. The lengthy section on cost allocation (rate spread) and rate design is unusual, since it appears to include far more than demand response. Also somewhat unusual is the amount of detail around modeling.

Planning Category	Description
Standard/Goals	• Conduct an efficient electricity supply resource planning process that evaluates the full range of cost-effective electricity supply and demand-side management options • Identify and cost-effectively manage and mitigate risks related to its obligation to provide electricity supply service • Provide adequate and reliable electricity supply service at the lowest long-term total cost and just and lowest long-term (planning horizon) price • Promote environmental responsibility • Facilitate utility’s financial health • Resulting rates that are equitable and promote rational, economically efficient consumption decisions • Portfolio most efficiently provides electricity supply services to customers over the planning horizon and is optimally mixed with respect to characteristics and term
Participation and communication	• Include the public in the portfolio planning process • Provide customers information regarding the mix of resources with associated emissions and environmental impacts • Consider supporting an independent advisory committee of respected technical and public policy experts – this could involve funding certain member participation • Consider ways of obtaining wider participation ○ Public meetings ○ Customer surveys
Duration	Not specified, NWE’s latest plan covers 20 years
Required Components	
• Load forecast	Yes, robust
• SSR evaluation	• Evaluate a broad range of options, including wholesale electricity products • Consider diversity and flexibility • Could include resource abandonment
• DSR evaluation	• Continually monitor and develop data on cost-effectiveness • up to 115% of long-term avoided cost until market barriers and failures eliminated
• T&D	Transmission

• Rate spread/design	• Evaluate rate design improvements as resources • Consider cost allocation and rate design decisions that might impact future loads and resources, including • Opportunity cost-based prices • Allocation based on cost causation and equity • Customer interest in rate stability and understandable structure • Costs and benefits of various specific options, e.g. TOU, seasonal, tiered, commitment-based etc. • Potential for demand response and load control • NWE's most recent IRP does not contain any discussion of rate spread/design
• Modeling	Use proven, cost-effective computer modeling and rigorous analyses to • Evaluate load and effects of DSR and rate designs on future load • Evaluate and quantify future resource requirements • Develop competitive resource solicitation bid and evaluation criteria and candidate resources for utility construction • Develop methods for weighting resource attributes (listed) • Evaluate performance of alternative resources under various load/resource combinations through scenario, portfolio, sensitivity, and risk analyses • Inject prudent and informed judgments into the planning and procurement process • Optimize the mix of resources • Meet the utility's burden of proof regarding prudence
• Risk and uncertainty	• Evaluate, manage and mitigate risk associated with uncertainty of wholesale markets and customer load • Identify and analyze sources of risk using own techniques and apply industry standard instruments and strategies to evaluated various risks (listed) • Manage and mitigate risk through adequate staffing, technical resources, resource/contract diversity, and contingency planning • Various techniques listed including modeling, acquiring resources with scheduling flexibility, small, short lead-time resources, diversification
• Externalities	• Externalities are imposed on society but not directly borne by producer and not accounted for in production costs and pricing • Maintain an environmentally responsible portfolio
• Action Plan	Yes

• Documentation	• Documentation must be thorough to fully demonstrate prudence of supply-related costs and justify pre-approval requests, including: ○ Due diligence re winning bidders ○ Cost estimates for all resource alternatives ○ Resource attributes considered, weightings and trade-offs, ranking and decision criteria ○ Computer modeling and analysis ○ Industry practices to procure resources and manage risks to extent formed basis for decision ○ Timing and impact of management judgment • Discussion and recommendations of utility's advisory committee
Formal Review Process	Commission review and comment on any concerns with the plan
Ratemaking implications of planning	Not explicit
Timing	Every odd year on December 15
Procurement Category	Description
Competitive bidding goals	• Use open, fair, and competitive procurement processes whenever possible • Industry standard procurement practices appropriate to the context and circumstances; generally: ○ Involve advisory committee ○ Explore a wide variety of resources ○ Collect proposals ○ Analyze feasibility and economic costs, risks and benefits of rate base and alternatives ○ Analyze options with respect to price and non-price factors ○ Develop a short list, refine the analysis and select the most appropriate option ○ Anticipate changing circumstances and stay flexible • Preferred method (with short-list negotiations)
Bid solicitations	Clearly communicate: • Resources, products and services needed • Bid evaluation and bidder qualification standards and criteria
Bid evaluations	• Apply published criteria firmly and consistently • Develop systematic rating system for price and non-price attributes • Document development and use of this rating system • Notify bidders of and give them an opportunity to respond to any attributes added during the evaluation process

Affiliates	• Close scrutiny – should not acquire from an affiliate unless through competitive solicitation • Must address concerns: ○ Possible subordination of supply obligation ○ “No harm to ratepayer” standard (lower of cost or market at time of contract execution) ○ Possible cross-subsidization ○ Imputed cost of necessary audits ○ Separate reporting ○ Adopted code of conduct
Resource ratemaking pre-approval - timing	• 45 days to determine if application adequate • 180 days to approve application for a power purchase contract • 270 days to approve application for an equity interest or lease • Commission may initiate review of planning and procurement prior to receiving application • Commission may retain independent consultant/advisory services using utility rate recoverable funding
Resource pre-approval - process	• Provide notice to Commission and Consumer Counsel, before RFP if using • Explain and justify all changes to most recent resource plan and 3-year action plan, including response to Commission comments • Testimony and workpapers ○ Fully describing the resource and supporting it as in the public interest ○ Comparing its cost and functionality to alternatives ○ Demonstrating carbon offsets ○ Copy of proposed contract ○ Copy of any RFP, bid evaluation, due diligence, and decision-making ○ Explaining any terms in a contract other than price, quantity and duration ○ Describing all pre-filing communication
Energy cost recovery tracking	• Prudently incurred costs are fully recoverable • Examine innovative methods to address cost recovery issues including revenue effects • Document ongoing portfolio planning, management and procurement activities and rolling 3-year action plans that include discussion of transmission and distribution functions and services

Montana Comparability Assessment

Attribute	Montana
Population (2005; 2011) • Overall • % urban	 • 936,000; 998,199 • 33.7%; 35.2%

Generation
• Summer net capability 2010
  ○ IOU
  ○ IPP
• Annual generation 2010
  ○ IOU
  ○ IPP
• IPP share of gen in 2000
• IPP share of gen in 2010
	• 5886 MW
	  ○ 2340 MW
	  ○ 3526 MW
	• 29,791 GWhrs
	  ○ 6,271 GWhrs
	  ○ 23,520 GWhrs
	• 41.8% MW; 74.9% GWhr
	• 60.1% MW; 78.9% GWhr

Electricity Load
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	○ 14,580 GWhrs
	○ 13,423 GWhrs
	○ -0.8%

Electricity retail revenue
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	○ \$729 M
	○ \$1,057 M
	○ +3.8%

RPS	Yes
EEPS or other standards	Not explicitly for utility portfolio
PURPA activity	Considerable
Member of organized market?	Only in far eastern part - MISO
Residential market characteristics • Space heat? • Per capita gas use per heating degree day • Per capita electricity use per cooling degree day • Prices compared to national average	• 59% natural gas; 16% electricity • Below Nat'l average – rank 36th • Considerably above Nat'l average – rank 4th • Below average: 8.23¢/kWh - relative increase since 1990 from 60.2% to 82.4% of Nat'l average

North Dakota Planning/Procurement Practices

Summary: North Dakota exercises a very light hand over resource planning, with the exception that state law forbids modeling any potential externality cost acquiring resources or setting rates. State energy facility siting law requires annual filings of ten-year plans for facilities but these are not, per se, integrated resource plans. MDU files an IRP and Northern States Power (NSP) and Otter Tail make a courtesy filing with North Dakota of the IRPs they file in other states they serve. In 2008, however, NSP agreed to a settlement under which it must file for an advanced determination of prudence for any new construction, rehabilitation, or acquisition of generation facilities greater than 50 MW and annually file a summary of its planned generation and transmission projects over a rolling five-year period.

Planning Category	Description
Standard/Goals	There are no explicit standards; implicitly based on MDU's IRP: • consider all resource options reasonably available to meet the end-use customer's demand for reliable, cost-effective, and environmentally responsible electricity • provide a road map for future resources that will produce competitively-priced, reliable power
Participation	MDU maintains an active planning advisory group, drawn from the 3 states in service territory
Required Components	It is not clear these are required (the order under which MDU does IRP is late 1980s and not available electronically) –below is based on MDU plan
• Load forecast	Yes MDU has performed a retrospective look at the accuracy of its forecasts
• SSR evaluation	Yes, based on "feasible" options. MISO provides ample short-term options to buy and sell but lacks long-term options
• DSR evaluation	Yes, based on "feasible" options A 2010 MDU RFP produced a 25-MW DR program
• T&D	No
• Rate spread/design	No
• Modeling	Yes; MDU uses the EPRI tool EGEAS
• Risk and uncertainty	Scenarios-based
• Externalities	• Per state law, the "commission may not use, require the use of, or allow electric utilities to use environmental externality values in the planning, selection, or acquisition of electric resources or the setting of rates for providing electric service." • The base case generally reflects only environmental requirements of current law; scenarios may cover other possibilities • Separate voluntary environmental actions may be discussed
• Action Plan	Yes
Formal Review Process	No, accepted for filing only
Ratemaking implications of planning	Considered, whether in traditional rate case or in the advance approval process
Timing	Every 2 years

Procurement Category	Description
Competitive bidding requirements	No; MDU 2011 plan states it will issue an all-source RFP "to start the next planning cycle" 3 bids from the 2010 RFP were represented in the 2011 IRP
Bid solicitations	No Commission review
Bid evaluations	No Commission review or standards
Resource ratemaking pre-approval	Yes The law includes a rebuttable presumption that a resource addition in the state is prudent and provides for recovery of sunk cost (with no return) in case a resource is abandoned before it is finished Statues does not require IRP but MDU referred extensively to it in its recent application for pre-approval of an SCCT
Energy cost recovery tracking	Yes

State Comparability Assessment

Attribute	North Dakota
Population (2005; 2011) • Overall • % urban	 • 636,000; 684,000 • 42.7%; 48%
Generation • Summer net capability 2010 ○ IOU ○ IPP • Annual generation 2010 ○ IOU ○ IPP • IPP share of gen in 2000 • IPP share of gen in 2010	 • 6,188 MW ○ 4,912 MW ○ 1,276 • 34,740 GWhrs ○ 31,344 GWhrs ○ 3,400 GWhrs • 0.8% MW; 0.6% GWhrs • 20.6% MW; 9.8% GWhrs (mostly wind)
Electricity Load • Average annual ○ 2000 ○ 2010 ○ Average annual change	 ○ 9,413 GWhrs ○ 12,956 GWhrs (biggest jump in comm.) ○ +3.2%
Electricity retail revenue • Average annual ○ 2000 ○ 2010 ○ Average annual change	 ○ $512 M ○ $921 M ○ +6.0%
RPS	Yes, but voluntary 10% by 2015
EEPS or other standards	No
Member of organized market?	Yes MISO (imposes certain planning requirements around capacity)

Residential market characteristics	
• Space heat?	• 43% natural gas; 29% electricity
• Per capita gas use per heating degree day	• Considerably below Nat’l average – rank 47th
• Per capita electricity use per cooling degree day	• Considerably above Nat’l average – rank 6th
• Prices compared to national average	• Below average: 7.49¢/kWh - relative decrease since 1990 from 87.5% to 75.0% of Nat’l average

Oregon Planning/Procurement Practices

Summary: Oregon's planning/procurement practice features significant requirements and detail but stops short of the Commission decision-making role Colorado has. Rules and requirements for planning and procurement were revised and updated in the mid-2000s, after the state's approach toward retail access resolved itself into one of access for non-residential customers but no resource divestiture by the utilities. Notwithstanding operating under the same rules, the states two major utilities take significantly different approaches to IRP, with PGE opting for detail and specificity and PacifiCorp favoring generalized information. PGE limits its modeling to "pure plays" to bracket NPVRR outcomes and then hand-selected portfolios; it has a goal of long-term resources equal to its average annual energy need.

PGE's most recent RFP has been in the approval process for almost one year. Recent IRP dockets have been long and controversial.

Planning Category	Description
Standard/Goals	• "Best combination of expected costs and associated risks and uncertainties for the utility and its customers" or best cost/risk portfolio • PVRR key cost metric • Consistent with the long-run public interest as expressed in state/federal energy policy
Participation	• The Commission expects utilities to enable significant public and stakeholder participation, both to contribute as well as receive information • Utilities must make a draft IRP available for public review and comment prior to filing plan with Commission
Required Components	
• Planning horizon and parameters	• 20 years plus end effects • All costs reasonably likely to be included in rates over period beyond planning horizon and end of life of resource
• Load forecast	• High and low load growth scenarios along with stochastic load risk analysis • Does not include customers on five-year opt-out for direct access because are "effectively" off the system
• SSR evaluation	• Energy/demand capability of existing resources • Costs of all possible new resources (energy and demand capability) – commercially available and other – to bridge the gap with load • Evaluated on a consistent and comparable basis, using after-tax COC • Includes different lead-time, duration, location, fuel transportation costs and infrastructure required • Specific guideline for distribution generation – to be included on par with central station

• DSR evaluation	• Identification and estimated costs of all potential measures, considering anticipated advance in technology • Periodic potential study required • Even if the utility obtains EE through the state's third-party EE provider (the ETO), it must still include DSR up to cost-effective level in the modeling process but then design action plan consistent with ETO's projections of acquisition
• T&D	• All existing transmission rights as well as transmission additions for any resource portfolios considered • Consider transmission and fuel transportation as resource options for making purchases and sales, or accessing cheaper resources or fuels • Distribution not included but utilities encouraged to have way of looking at local resources to postpone investment outside of IRP
• Rate spread/design	Only demand response
• Modeling	Test representative set of resource portfolios over range of identified risk/uncertainty
• Risk and uncertainty	Risk is a measure of bad outcomes associated with a resource plan; uncertainty is a measure of the quality of information about an event or outcome • Certain minimum required areas: hydro, fuel, forced outage, load, GHG compliance; utilities to identify any others considered • Two PVRR scenarios – variability of cost and severity of bad outcome • Must discuss use of physical and financial hedging • Reliability cost/risk trade-off and reserve margin decision • Rank ordering by cost/risk metric and interpretation
• Externalities	Limited to costs that are now or may become internalized in the future; sensitivity analysis on range of what may be possible
• Action Plan	• Plan that presents best cost/risk, including discussion of any inconsistencies with energy policy or barriers to implementation and key attributes of each resource selected • Loss of load probability, expected planning reserve margin, and expected and worst-case un-served energy should be determined by year for top-performing portfolios
• Resource Acquisition	• Identify its proposed acquisition strategy for each resource in its action plan • Assess the advantages and disadvantages of owning a resource instead of purchasing power from another party • Identify any Benchmark Resources it plans to consider in competitive bidding
• Other	Multi-state utilities to plan on an integrated system basis

Formal Review Process	• Utility to present plan at public meeting before comments due • Staff and parties to complete comments and recommendations within 6 months of filing • Commission to consider comments at public meeting before deciding; may give utility change to revise plan • Commission may include in order requests for analyses or actions in next planning cycle
Ratemaking implications of planning	• Acknowledgement means found reasonable at time of decision; generally is of generic resources but utility could request acknowledgement of a specific resource • IRP is not the evidentiary record to be used for prudence – parties may submit other information
Timing	• Within two years of last plan acknowledgement – may request extension if do not plan to take any resource actions for at least two years after filing is due • Update is required on anniversary of plan acknowledgement; utility may also do one if anticipates major deviation
Procurement Category	Description
Competitive bidding goals	• Provide opportunity to minimize long-term energy costs, subject to economic, legal and institutional constraints; • Complement IRP • Not unduly constrain utility management's prerogative to acquire new resources • Be flexible, allowing the contracting parties to negotiate mutually beneficial exchange agreements • Be understandable and fair
Competitive bidding requirements	• Must issues for resources greater than 5 years duration and 100 MW. Projects within a tight radius (5 miles) and certain other criteria will be considered as one project for purposes of the 100 MW • Exceptions: ○ Emergency or time-limited opportunity of unique value – report within 30 days ○ IRP acknowledges alternate acquisition method ○ Case-by-case waiver – dealt with in 120 days
Ownership options	Bid may include self-build (benchmark) and turnkey options, as well as affiliates (requires blind bidding)
Independent Evaluator	• Required for all RFPs, whether have utility owned resources in them or not • Commission staff recommends to Commission who chooses, utility pays but may recover the costs in rates • IE prepares a closing report after selection of the short list • Utility does RFP; IE oversees • If no benchmark resource, IE checks scoring of only a sample of bids

Bid solicitations	• Utility must submit draft RFP to Commission for approval, including standard contracts • Utility must conduct bidder workshops in preparing RFP and consult with the IE, who will prepare a recommendation to the Commission re the RFP • Target action on draft within 60 days after filing, per goals • RFP must include evaluation and scoring criteria and min requirements – cannot exclude QFs larger than 10 MW
Benchmark resources	• Utility must submit detailed score with cost info to Commission and IE prior to opening bidding and this will remain sealed until conclusion of process • Utility may update its benchmark resource only if all bidders allowed to update • Commission may expand role of IE in bids containing a benchmark resource through final selection on a case-by-case basis, if any party so requests during approval of short-list • IE has greater role if bid includes a benchmark resource: must score independently and evaluate unique risks and advantages
Bid evaluations	• Detailed requirements re scoring of price and non-price factors and short list and final • IE will evaluate scoring • Utility may consider debt imputation in final selection • Bidders must be allowed to negotiate mutually agreeable different terms
Resource ratemaking pre-approval	No, but utility may request Commission to acknowledge selection of the short list
Energy cost recovery tracking	Partial

State Comparability Assessment

Attribute	Oregon
Population (2005; 2011) • Overall • % urban	 • 3.6 M; 3.872 M • 70.2%; 78%

Generation
• Summer net capability 2010
  ○ IOU
  ○ IPP
• Annual generation 2010
  ○ IOU
  ○ IPP
• IPP share of gen in 2000
• IPP share of gen in 2010
	
	• 14,261 MW
	  ○ 10,846 MW
	  ○ 3415 MW
	• 55,127 GWhrs
	  ○ 10,846 GWhrs
	  ○ 3415 GWhrs
	• 8.3% (11.1% energy-based)
	• 23.9% (25.4% energy-based)

Electricity Load
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	
	○ 50,330 MMWhrs
	○ 46,026 MMWhrs
	○ -0.9%

Electricity retail revenue
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	
	○ 2460 M
	○ 3479 M
	○ +3.5%

RPS	Yes
EEPS or other standards	No (ETO funding)
Member of organized market?	No
Residential market characteristics • Space heat? • Per capita gas use per heating degree day • Per capita electricity use per cooling degree day • Prices compared to national average	 • 35% natural gas; 49% electricity • Considerably below Nat'l average – rank 43rd • Considerably above Nat'l average – rank 3rd • Below average: 8.08¢/kWh - relative increase since 1990 from 63.6% to 80.9% of Nat'l average

South Dakota Planning/Procurement Practices

Summary: In a manner similar to North Dakota, South Dakota approaches planning and procurement with a light hand. The state does require a summary ten-year plan similar to North Dakota's but IRP is voluntary. Nonetheless, Black Hills Power (BHP) does one for Wyoming and South Dakota and Northern States Power (NSP, an Xcel utility) does one for Minnesota, South Dakota and other bits of service territory excluding Colorado. Both utilities provide these to the South Dakota Commission and use them in rate cases. In recent rate case stipulations, both utilities agree to involve the Commission more in their IRP and BHP agreed to certain specific requirements for its IRP.

Planning Category	Description
Standard/Goals	There are no explicit standards; implicitly based on utility IRPs: • Ensure a reasonable level of price stability for its customers • Generate and provide safe, reliable electricity service while complying with all environmental standards • Manage and minimize risk • Continually evaluate renewable resources for the energy supply portfolio, being mindful of the impact on customer rates
Participation	BHP agreed to provide for both public and Commission participation in reparation of the IRP
Required Components	List below reflects contents of both the required ten year plans and the voluntary filed IRPs from BHP and NSP
• Generation	• Yes – current and proposed, including potential retirements and a cost-benefit analysis for any such • For BHP, near-term years of modeling compared to actual historical performance; • South Dakota encourages cooperative planning and resource ownership
• Load forecast	Yes For BHP, its loads and resources only
• SSR evaluation	• Based on a selection of resources, not "all" • BHP agreed to evaluate new purchased power contracts through a formal solicitation process, or other specific market information identifying the market price for purchased power and to consider both nuclear and small combined cycle units
• DSR evaluation	• Plans tend to reflect only load management efforts • South Dakota now has a separate EE process
• T&D	• Yes – current and proposed transmission facilities • State now has a separate requirement for reporting on a utility's smart grid plans
• Rate spread/design	No
• Modeling	Yes in IRP only
• Risk and uncertainty	Yes, fairly standard approaches (sensitivity, risk trade-offs) in IRP only
• Externalities	Externalities evaluated only as risk of becoming direct cost; BHP agreed to consider third party estimates of potential CO_2 taxes used by others in planning
• Action Plan	Yes

Formal Review Process	No
Ratemaking implications of planning	Use intended to relate mostly to siting certificate but both NSP and BHP have successfully used as support for prudence of a resource decision
Timing	Ten-year plan are biennial; IRPs vary
Procurement Category	Description
Competitive bidding requirements	None; however, in a recent stipulation BHP agreed to run a solicitation or otherwise get market information before making a resource decision
Bid solicitations	NA
Bid evaluations	NA
Resource ratemaking pre-approval	NA
Energy cost recovery tracking	Yes

State Comparability Assessment

Note: BHP, NSP, and NWE have the majority of load in South Dakota

Attribute	South Dakota
Population (2005; 2011) • Overall • % urban	 • 780,000; 824,082 • 33%; 45.6%
Generation • Summer net capability 2010 ○ IOU ○ IPP • Annual generation 2010 ○ IOU ○ IPP • IPP share of gen in 2000 • IPP share of gen in 2010	 • 3623 [note: @60% hydro operated by USCE – WAPA?] ○ 2994 MW ○ 629 MW • 10,000 GWhr ○ 8600 GWhr ○ 1400 GWhr • None • 13.4% [all wind]
Electricity retail Load • Average annual ○ 2000 ○ 2010 ○ Average annual change	 ○ 11,356 GWhr ○ 8,283 GWhr ○ -3.1%
Electricity retail revenue • Average annual ○ 2000 ○ 2010 ○ Average annual change	 • ○ $523 M ○ $888 M ○ +5.4%
RPS	Yes, 10%
Member of organized market?	MISO

Residential market characteristics • Space heat? • Per capita gas use per heating degree day • Per capita electricity use per cooling degree day • Prices compared to national average	 • 48% NG/20% electricity [22% LPG] • Considerably below Nat'l average – rank 44^{th} • Above Nat'l average – rank 15^{th} • Below average: 8.09¢/kWh – relative drop since 1990, from 93.2% to 81.0% of Nat'l average

Utah Planning/Procurement Practices

Summary: Utah's practice is quite similar to Oregon except that Utah requires resource bidding for, and a Commission decision whether to pre-approve, any resource over 100 MW unless exceptions apply. The requirements are quite detailed. The most recent review of PacifiCorp's (Rocky Mountain Power) IRP included considerable concern with shortcomings and desired improvements. The review also expressed concern about reliance on the market and asked that PacifiCorp look to the WECC for information to establish adequacy of wholesale market options.

Planning Category	Description
Standard/Goals	• Lowest total cost to the utility and its customers and consistent with the long-run public interest • IRP requires the utility to "pursue the least cost alternative for the provision of energy services to its present and future ratepayers that is consistent with safe and reliable service, the fiscal requirements of a financially healthy utility, and the long-run public interest." • Should result in selection of "optimal set of resources given the expected combination of costs, risk and uncertainty"
Participation	• Encourages "information exchange," open to the public at all stages • Requires coordination with other jurisdictions
Required Components	
• Planning horizon	20 years
• Basis of resource comparison	• All resource options looked at on a consistent and comparable basis • Cost-effectiveness from perspective of utility and the different classes of ratepayers
• Load forecast	• Range of estimates required; both demand and energy • Consider economic and demographic facts, including price elasticity and end-use changes • Includes wholesale requirements customers
• SSR evaluation	• All present and future options, including future market opportunities • Consider life expectancy and flexibility • Includes analysis of role of competitive bidding for both SSR and DSR
• DSR evaluation	All technically feasible and cost-effective measures
• T&D	Transmission yes; distribution only indirectly (e.g. in connection with DSR)
• Rate spread/design	Narrative describing how current rate design is consistent with IRP goals and how changes might facilitate IRP objectives
• Modeling	No explicit requirements
• Risk and uncertainty	• Financial, competitive, reliability and operational; including who should bear each risk: utility or customers • Analysis of trade-offs between attributes (e.g. reliability) and cost • Considerations of how to get flexibility in the planning process to utility can take advantage of opportunities and prevent premature closure of options
• Externalities	• Required, using ranges rather than precise quantification • RMP uses scenario analysis plus specific externality adders

• Action Plan	• Specific decisions deigned to implement IRP in manner consistent with strategic business plan (includes Significant Energy Resource decisions – see below) • 4-year horizon: specifics for 2; outline for 2 • Report on specific actions in the previous plan • To include different paths for different economic circumstances, and way to modify path as future unfolds • Statutory requirement for review of Action Plan in significant resource legislation
• Other	• Avoided cost determined consistently with IRP • Utility's "Strategic Business Plan" must directly relate to the IRP • Off-system sales to be considered for impact on risks associated with various strategies
Formal Review Process	• Draft submitted for public review and comment • Commission reviews for adherence to guidelines and can return to utility for more work • Utility to give presentation on IRP to Commission and all interested public parties
Ratemaking implications of planning	Acknowledgement only; used in rate cases to evaluate performance and review avoided cost calculations
Timing	Every two years
Procurement Category	Description
Competitive bidding requirements	• Required for Significant Energy Resources (see below) • All process fair, reasonable and in the public interest
Bid solicitations	• Yes – approval required • Must give at least 60 days notice so Commission can hire independent evaluator (IE) • Pre-bidders conference required • Comments in 45 days; IE comments in 55 days; utility reply comments in 65 days • List of what screening criteria may be, including Commission-approved consideration of imputed debt • Must identify if is a benchmark resource and whether is owned or market – team that works on this (bid team) may not be same as evaluation team and communication restricted • Draft contracts if applicable; evaluation criteria (including weighting and ranking)
Bid evaluations	• Benchmark resource validated by IE up front and cannot be changed unless all bidders given chance to update/change • IE verifies the models, data

Resource ratemaking pre-approval – Significant Energy Resources	• Utility must use competitive bidding for and get pre-approval of Significant Energy Resources: owned, contracted, leased 100 MW or more capacity and 10 years or more duration • Exceptions for (time limits apply to processing): ○ Clear emergency ○ Time-limited or technical opportunity ○ Renewable under 300 MW ○ Any other reason that makes exception in the public interest • Commission must act (including holding a hearing) within 120 days unless delay warranted by public interest and shall approve, approve with conditions, or disapprove the action, using same standard as for IRP and including total projected costs for the resource or purchase in the order • Commission must include costs of approved resource in rates, up to costs included in resource approval; increased costs allowed if found prudent given changed circumstances • Process for proceeding if conditions change • Costs incurred to identify, evaluate and submit a benchmark resource (whether or not ever completed or purchased) are also recoverable
Energy cost recovery tracking	Yes

State Comparability Assessment

Attribute	Utah
Population (2005; 2011) • Overall • % urban	 • 2,505,000; 2,817,222 • 77.1%; 88.7%
Generation • Summer net capability 2010 ○ IOU ○ IPP • Annual generation 2010 ○ IOU ○ IPP • IPP share of gen in 2000 • IPP share of gen in 2010	 ○ 6648 MW ○ 849 MW ○ 39,522 GWhrs ○ 2,727 GWhrs • 2.1% (same MW & GWhrs) • 11.3% MW, 6.5 GWhrs
Electricity Load • Average annual ○ 2000 ○ 2010 ○ Average annual change	 ○ 23,185 GWhrs ○ 28,044 GWhrs ○ +1.9%

Electricity retail revenue
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	
	○ $1,123 M
	○ $1,948 M
	○ +5.7%

RPS	Yes, 20% by 2025 if cost-effective
Member of organized market?	No
Residential market characteristics • Space heat? • Per capita gas use per heating degree day • Per capita electricity use per cooling degree day • Prices compared to national average	 • 85% NG, 10% electricity • Above Nat'l average – rank 17th • Below Nat'l average – rank 27th • Below average: 7.13¢/kWh – relative drop since 1990, from 83.1% to 71.4% of Nat'l average

Washington Planning/Procurement Practices

Summary: Washington's planning and procurement practice represents a middle ground between the light-handed approach of Idaho, the Dakotas and Wyoming and the involved approaches of Colorado, Utah and Oregon. Washington requires an all-source bid but specifically provides that the utility may reject all of the bids if none adequately serve customer interests and that the bidding process is not the sole means by which the Commission expects the utility to acquire resources.

Planning Category	Description
Standard/Goals	• Meet system demand with a least cost mix of energy supply resources and conversation • Lowest reasonable cost to the utility and ratepayers
Participation	Consultation essential Work plan (see below) to outline plans for public participation
Approach	Detailed and consistent analysis of a wide range of commercially available sources, considering cost, market-volatility risks, DSR uncertainties, dispatchability, effect on system operation, risks imposed on ratepayers, state and federal public policies and the cost of risks associated with environmental effects
Duration	At least ten years; longer if appropriate to resources under consideration; 20 years for load forecasts
Required Components	
• Load forecast	Yes – assess economic effects on consumption and change in end uses (number, type, efficiency)
• SSR evaluation	Yes – wide range
• DSR evaluation	Yes – commercially available
• T&D	Transmission, capability and reliability to extent possible under law; T&D in the comparative evaluation
• Rate spread/design	No
• Modeling	Nothing specified
• Risk and uncertainty	Yes – part of lowest reasonable cost
• Externalities	Yes – part of lowest reasonable cost
• Action Plan	Yes – two years Include report on actions taken under prior action plan
• Other	Puget Sound Energy sees IRP as opportunity to explore "strategic issues"
Work Plan	Work plan required 12 months before planned filing, specifying content. Methods, and plan for public participation
Formal Review Process	Public hearing after filing of plan
Ratemaking implications of planning	"Considered" in ratemaking
Timing	Every two years from date of previous filing

Procurement Category	Description
Competitive bidding requirements	• Yes but as not sole procedure utilities must use to acquire new resources; may construct, operate conservation programs, purchase power through negotiated contracts, or take other action to satisfy their public service obligations • Does not apply when IRP indicates no need within next 3 years • Solicit bids, rank project proposals and identify any bidders meeting minimum requirements • Information obtained in bidding considered in ratemaking
Bid solicitations	• Proposed all-source RFP to Commission within 135 days after IRP due at Commission; comments within 60 days; Commission to approve or suspend RFP within 30 days after comments; solicitation must occur within 30 days of Commission approval • If utility or affiliate is bidding, RFP must clearly indicate and how it will ensure no unfair advantage (any disclosures to team preparing bid that are not simultaneously public are per se unfair) • Utility can choose to do a targeted RFP in addition
RFP content	• Resource block sought • Estimate of avoided costs (subject to update at any time – not a guarantee) • General evaluation and ranking procedures – are subject to Commission approval, based on IRP “lowest reasonable cost” criteria • Timing • Utility is encouraged to consult with staff during preparation of RFP • Utility may reject any bids that do not specify cost of complying with environmental regulations
Bid evaluations	• Utility may reject all if none “adequately serves ratepayers’ interests” • Price, price structure and terms all subject to negotiation – but if material changes made to proposal, must re-rank all bids
Independent evaluator	If utility or affiliate is bidding, one or more competing bidders may request commission to appoint IE to assist commission staff in its review of the bid; fees to be paid by the party or parties requesting the IE
Resource ratemaking pre-approval	No
Energy cost recovery tracking	Yes

State Comparability Assessment

Attribute	Washington
Population (2005; 2011) • Overall • % urban	 • 6,2710,000; 6,830,038 • 82.8%; 88%

Generation
• Summer net capability 2010
  ○ IOU
  ○ IPP
• Annual generation 2010
  ○ IOU
  ○ IPP
• IPP share of gen in 2000 (summer; annual)
• IPP share of gen in 2010 (summer; annual)
	
	• 30,478 MW
	  ○ 26,498 MW
	  ○ 3,979 MW
	• 103,473 GWhrs
	  ○ 88,057 GWhrs
	  ○ 15,416 GWhrs
	• 8.5%; 11.1%
	• 13.1%; 14.9 %

Electricity Load
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	
	  ○ 96,511 GWhrs
	  ○ 90,380 GWhrs
	  ○ -0.65%

Electricity retail revenue
• Average annual
  ○ 2000
  ○ 2010
  ○ Average annual change
	
	  ○ $4,180 M
	  ○ $6,016 M
	  ○ +3.71%

RPS	Yes
EEPS or other standards	Yes – "all cost-effective"
Member of organized market?	No
Residential market characteristics • Space heat? • Per capita gas use per heating degree day • Per capita electricity use per cooling degree day • Prices compared to national average	 • 33% natural gas; 53% electricity • Considerably below Nat'l average – rank 41st • Considerably above Nat'l average – rank 2nd (Alaska is No. 1) • Below average: 6.78¢/kWh - relative increase since 1990 from 51.7% to 67.9% of Nat'l average

From Acknowledgement letter, PSE 2011 IRP:

Yet in some areas the Company should explain better how and why it chose certain inputs and assumptions for the modeling. For example, in Appendix H concerning demand forecasts, the Company does a good job in describing the methodology, key assumptions, and the load forecast models on the electric and gas sides. However, as is discussed later, it is not sufficiently clear how the Company's choices of inputs or forecasting methodology affect the final results of the load forecast. Since the results of the load forecasts are such critical components of the overall Plan, it is important that the Company make clear the basis of its choices and how they influence the ultimate results.

. . . Since the planning environment is dynamic and constantly changing, especially in the context of public policy requirements, the inter-relationships between the Company's assumptions and the output of the models should be made as clear as possible.

The Plan's PRP calls for the addition of 2,443 MW of SCCT's and the addition of no CCCTs during the 20-year planning horizon. We note this is a significant financial and resource commitment by PSE to a particular type of resource. The preferred portfolio calls for many of these peakers to be acquired throughout the 20-year period, including a commitment of 1,278 MW by 2020. It also calls for 50 MW of biomass, 500 MW of "transmission and market," and 400 MW of wind during the 20-year planning horizon.

We conclude that the Plan contains a comprehensive explanation of PSE's existing resources and of the cost of generic resources from which the model may select. However, it does not adequately describe how the price assumptions for various generic resources might alter final selection of preferred resources. For instance, the Company estimates that the capital costs of a CCCT is approximately 50 percent more expensive than a SCCT but does not provide analysis showing at what price point, if any, the model might select a CCCT instead of a peaker.

Sierra Club comments that in its next IRP PSE should model the shutdown of Colstrip and add a sensitivity that includes future regulatory costs of operating Colstrip. PSE provides a useful critique of its modeling of a "no northwest coal" scenario. We agree with PSE's commitment to study the modeling of this scenario. We also conclude additional modeling of Colstrip scenarios in PSE's next IRP would be useful.

PSE should model a scenario without Colstrip that includes results showing how PSE would choose to meet its load obligations without Colstrip in its portfolio and estimates of the impact on Net Present Value (cost) of its portfolio and rates.

PSE should conduct a broad examination of the cost of continuing the operation of Colstrip over the 20-year planning horizon, including a range of anticipated costs associated with federal EPA regulations on coal-fired generation.

Action Plan should be more explicit

(See PSE 2011 RFP Evaluation criteria – very broad, no weighting. Commission approved.)

Wyoming Planning/Procurement Practices

Summary: Wyoming's planning and procurement practices are similar to those in North and South Dakota. The Commission requires that any utility serving in Wyoming and required to file an IRP in any jurisdiction, shall also file that IRP in Wyoming, and may require any utility to prepare and file an IRP when the Commission determines it is in the public interest. Commission staff set guidelines for such ad hoc IRPs.

Planning Category	Description
Standard/Goals	• Per staff guidelines: may include, but is not limited to, least-cost/least-risk planning, satisfying portfolio standard requirements, providing reliable service, minimizing costs and environmental impacts, and increasing deliverability efficiency, and the justification for the resource portfolio selected • Utility to state what standard it is applying;
Participation	Public process should begin early before completing plan
Planning Horizon	Near-term is 3-5 years; long-term is 10 – 20 years
Required Components	Most of the below is per Staff guidelines or implicit in the contents of IRPs filed in the state
• Load forecast	Yes, including any change since last IRP forecast
• SSR evaluation	Should include: • A demonstration and analysis as to whether the resources studied are the least-cost/least risk • The types of resources considered • A demonstration that assumptions used in the study are reasonable • The optimum level and amount of market purchases used in the study, comparison of market purchases in the utility's portfolio over time
• DSR evaluation	Yes, current and proposed programs
• Reserve margin analysis	Yes
• T&D	Not specifically mentioned; is covered in RMP and BHC plans
• Rate spread/design	No
• Modeling	Yes, but no specific requirements except to state assumptions
• Risk and uncertainty	• Sensitivity analysis required; • Must explore risk of market purchases and risk the market purchases will not be economically available in the future
• Externalities	Yes, including specifically CO_2
• Action Plan	Yes, including any changes from the prior resource plans
Formal Review Process	No – accepted for filing, comments taken and docket closed
Ratemaking implications of planning	None explicit; have been used in rate cases to support resource actions Also used in applications for CPCN
Timing	Not specified; generally every 2-3 years

Procurement Category	Description
Competitive bidding requirements	No
Bid solicitations	NA
Bid evaluations	NA
Resource ratemaking pre-approval	NA
Energy cost recovery tracking	Yes

State Comparability Assessment

Attribute	Wyoming
Population (2005; 2011) • Overall • % urban	 • 500,000; 568,158 • 30%; 30%
Generation • Summer net capability 2010 ○ IOU ○ IPP • Annual generation 2010 ○ IOU ○ IPP • IPP share of gen in 2000 • IPP share of gen in 2010	 • 8,000 MW ○ 7000 MW ○ 1000 MW • 48,000 GWh ○ 45,000 GWh ○ 3,000 GWh • 2.9% • 13.25 [wind mostly, about 73% of IPP energy]
Electricity Load • Average annual ○ 2000 ○ 2010 ○ Average annual change	 • [Note: industrial load is 58.8%, down just 0.4% from 2000] ○ 12,368 GWhrs ○ 17,113 GWhrs ○ +3.3%
Electricity retail revenue • Average annual ○ 2000 ○ 2010 ○ Average annual change	 • ○ $537M ○ $1,061M ○ +7.0%
RPS	No
EEPS or other standards	No
Member of organized market?	No

Residential market characteristics • Space heat? • Per capita gas use per heating degree day • Per capita electricity use per cooling degree day • Prices compared to national average, 2011	 • 64% NG; 19% electricity • Slightly below Nat'l average – rank 33rd • Considerably above Nat'l average – rank 5th • Below average: 6.58¢/kWh – relative increase since 1990 from 64.0% to 65.9% of Nat'l average

Bibliography
State Resource Planning/Procurement Practices

Arizona
Docket No. RE-00000A-09-0249; Order 71722
R14-2-701 et seq.
Arizona Public Service 2012 IRP and related documents
Tucson Electric Power 2012 IRP and related documents

Colorado
4 Code of Colorado Regulations 3600 – 3617 and 3625 - 3627
Public Service of Colorado 2007 IRP and 2011 IRP and related documents
Docket 07A-447E, Decision No. C08-0929 and related documents

Idaho
Idaho Code 61-541
Order 22299 from Case # U-1500-165 (1989)
Order 24729 from Case #GNR-E-93-1 (1993)
Order 25260 from Case #GNR-E-93-3 (1993)
Idaho Power Company 2009 IRP and 2011 IRP
Rocky Mountain Power 2011 IRP
Case No. PAC-E-11-10, Order No. 32351 and related documents
Case No. IPC-E-09-33, Order No. 32042 and related documents
Case No. IPC-E-09—03, Order No. 30892 and related documents

Michigan
Case No. U-15900 (draft competitive bidding rules) and related documents
2008 Public Act 295
Case No. U-15896 (draft integrated resource planning rules) and related documents
Consumers Energy Electric Generation Alternatives Analysis For Proposed Permit to Install (PTI) No. 341-07 For an Advanced Supercritical Pulverized Coal Boiler at the Karn-Weadock Generating Station, Essexville, Michigan Docket Number: U-15996 and related documents
Wolverine Power Supply Cooperative Electric Generation Alternatives Analysis For Proposed Permit to Install (PTI) No. 317-07 For Circulating Fluidized Bed Coal Boilers at Rogers City, Michigan Docket Number: U-16000 and related documents
Report On The Implementation Of The P.A. 295 Renewable Energy Standard And The Cost-Effectiveness Of The Energy Standards; Michigan Public Service Commission; Department of Licensing and Regulatory Affairs; In compliance with Public Act 295 of 2008; February 15, 2012

North Dakota
North Dakota Laws 49-05-16
North Dakota Administrative Code 69-06-02-01 and -02
Montana Dakota Utilities 2011 IRP and related documents
Montana Dakota Utilities 2011 Ten-Year Plan
Case No. PU-11-395/396 Application for an Advance Determination of Prudence and a Certificate of Public Convenience and Necessity for an 88 MW Simple Cycle Combustion Turbine and related documents

Oregon
Oregon Administrative Rule 860-027-0400
Docket UM-1056, Order No. 07-002 (adopting IRP guidelines)
Docket UM-1182, Order Nos. 06-446, 11-340, 12-007
PacifiCorp 2011 IRP and related documents
Portland General Electric 2011 IRP and related documents
Docket No. UM 1535 and related documents

South Dakota
South Dakota Laws 49-41B-3
South Dakota Administrative Code 20:10:21:04 et seq.
Montana Dakota Utilities 2006, 2008, and 2010 Ten-Year Plans
Northwestern Energy 2006, 2008, and 2010 Ten-Year Plans
Docket EL08-028 and related documents

Utah
Utah Administrative Code 746-420, -430, -440, and -700 et seq.
Utah Laws 54-17-102, -201 et seq, -301 et seq, -401 et seq, -501 et seq
Rocky Mountain Power 2008 IRP and 2011 IRP and related documents
Docket No. 09-2035-01 and related documents

Washington
Washington Administrative Code 480-107-001 et seq, 480-90-238 et seq., and 480-100-238 et seq
Puget Sound Energy 2011 IRP and related documents
Docket No. UE-100961 and related documents
Docket No. UE-111405 and related documents

Wyoming
Commission Guidelines Regarding Electric IRP
In The Matter Of The Filing By Pacificorp D/B/A Rocky Mountain Power Of Its Integrated Resource Plan (IRP) For 2011 - Docket No. 20000-394-Ea-11 (Record No. 12813) Letter Order (Issued December 8, 2011)
Rocky Mountain Power 2011 IRP and related documents