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July 9, 2019

MEMORANDUM

TO: Council Members

FROM: Ben Kujala and John Shurts

SUBJECT: Briefing on Power Plan 101 and introduction on modeling and analytics

BACKGROUND:

Presenter: Ben Kujala and John Shurts

Summary: This will be a discussion of the components of a Power Plan set forth in the Power Act and a high-level discussion of the modeling and analytics used to support the plan.

The first half of this agenda item will use the attached outline of the power plan provisions of the Act. The emphasis in this briefing will be on the Act's substantive requirements for the power plan, to match the follow-on discussion of modeling and analytics. Slides relevant to that second topic follow in the attachments.

Relevance: The act calls for the Council to prepare, adopt, and promptly transmit to the Administrator a regional conservation and electric power plan. The plan shall be reviewed by the Council not less frequently than once every five years. Developing the plan is part of the statute the Council operates under.

Workplan: A. Develop the 2021 Power Plan

Past Presentations to review for background:

- [Context and history](#) of the Power Act and the power plan - February 2019, Power Committee
- Background presentations given to the Council or Power Committee to date on various Power Plan processes:
<https://www.nwcouncil.org/2021-power-plan-committee-and-council-presentations>

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Outline of power plan provisions of the Northwest Power Act

Road map of discussion (emphasis today will be on part 4):

1. Power plan provisions in general, including basic directive and timing
2. Relevant Purposes of the Act
3. Procedure: public process for developing and adopting the power plan
- 4. Substantive considerations and elements of the power plan**
5. Relationship of the Council's power plan to Bonneville resource acquisitions
6. Relationship of the Council's power plan to resource decisions by others than Bonneville

relevant excerpts from the Act are attached at the end

1. Power plan provisions in general, including basic directive and timing

Summary list of relevant provisions in NW Power Act:

- Power plan provisions are in Sections 4(d) through 4(g) (attached at back)
- Relevant definitions in Section 3 (attached)
- Purposes of Act in Section 2 inform how the Council is to understand and implement the power plan provisions (attached)
- Section 4(d)(2) and Sections 6(a), 6(b) and 6(c) describe the relationship of Bonneville's resource acquisitions to the Council's power plan (attached)

Basic directive to the Council:

Per Section 4(d)(1), Council is to adopt and transmit to Bonneville a “**regional conservation and electric power plan.**”

Timing:

- Section 4(d)(1) Council is to “review” the power plan “not less frequently than once every five years.”
- This section also recognizes that the plan “may be amended from time to time.”
- Note that prior to the review of the plan or any major amendments, Section 4(h)(2) requires the Council to call for recommendations to amend the fish and wildlife program, thereby triggering first a fish and wildlife program amendment process under Section 4(h).

2. Relevant Purposes of the Act

- 2(1)** to encourage, through the unique opportunity provided by the Federal Columbia River Power system,
- (A) conservation and efficiency in the use of electric power, and
 - (B) the development of renewable resources within the Pacific Northwest
- 2(2) to assure the Pacific Northwest an adequate, efficient, economical, and reliable power supply**
- 2(3)** to provide for the participation and consultation of the states, local governments, consumers, customers, users of the Columbia River system (including federal and state fish and wildlife agencies and Indian tribes), and the public at large within the region in:
- (A) the development of regional plans and programs related to energy conservation renewable resources, other resources, and protecting, mitigating and enhancing fish and wildlife resources
 - (B) facilitating the orderly planning of the region's power system, and
 - (C) providing environmental quality
- 2(6)** to protect, mitigate and enhance the fish and wildlife of the Columbia River and its tributaries...

3. Procedure: public process for developing and adopting the power plan

Process generally:

- **Sections 4(d)(1) and 4(g)** describe the process the Council is to follow in preparing the power plan.
- Lightly scripted, especially compared to fish and wildlife program. Reflects the significant differences between the role of the Council in power planning and its role in fish and wildlife program development, recognized by the Ninth Circuit (compare *Seattle Master Builders* in 1986 and *NRIC v. Council* in 1994).

Public hearings:

- **Section 4(d)(1)** requires the Council to hold a **public hearing** in each Council member's state prior to adoption of the plan or "any substantial, nontechnical amendments to the plan."
- Also provides that a public hearing shall also be held "in any other State of the region" "if the Council determines that the plan or amendments would likely have a substantial impact on that State in terms of major resources which may be developed in that State and which the Administrator may seek to acquire." Has never happened.

Draft power plan:

- The Act says nothing explicit about a **draft plan**, although implied by the notion of having public hearings on plan prior to adoption.
- The Council largely follows the notice and comment procedures specified in the federal Administrative Procedures Act, including:
 - wide public notice of the proposed or draft power plan -- and often of major elements of the plan in formulation before the draft
 - opportunities for written comment as well as to testify at public hearings
 - explanation at the end as to how the Council considered comments in shaping the final power plan
 - publication of notice of final plan in Federal Register

Participation and engagement:

- **Section 4(g)(3)** provides that the Council (and Bonneville) is to encourage the cooperation, participation, and assistance of appropriate federal agencies, state entities, state political subdivisions, and Indian tribes in the preparation, adoption, and implementation of the power plan. The Council (and Bonneville) are "authorized to contract" "with such agencies, entities, tribes, and subdivisions individually, in groups, or through associations thereof to (A) investigate possible measures to be included in the plan, [and] (B) provide public involvement and information regarding a proposed plan or amendment thereto.

- Sections 4(g)(1) and (2) add generally that the Council (and Bonneville) are to, among other things:
 - insure widespread public involvement in the formulation of regional power policies
 - maintain comprehensive programs to inform the public of major regional power issues
 - obtain public views on major regional power issues
 - secure the advice and comments of Bonneville’s power sales customers and others
 - consult with the Bonneville customers and include the comments of the customers in the record of the Council's proceedings
 - recognize and not abridge the authorities of state and local governments, electric utility systems, and other non-federal entities responsible for the planning, supply, distribution, and operation of electricity generating facilities

Advisory committees:

- **Section 4(c)(11)** requires the Council to establish a “scientific and statistical advisory committee” to assist in the “development, collection, and evaluation of such statistical, biological, economic, social, environmental, and other scientific information as is relevant to the Council's development and amendment of a regional conservation and electric power plan.”
- Section 4(c)(12) authorizes the Council to establish other advisory committees as the Council deems appropriate.
- Section 4(c)(13) directs the Council to ensure advisory committee members include, “to the extent feasible,” representatives from and seek the advice of “Federal, and the various regional, State, local, and Indian Tribal Governments, consumer groups, and customers.”

Judicial review of adopted power plan

- Adoption of the power plan is a final action subject to judicial review. Section 9(e)(1)(A)
- Challenges must be filed in the Ninth Circuit. Must be filed within sixty days after publication of the notice of final agency action in the Federal Register. Section 9(e)(5)
- By Section 9(e)(2), review is limited to the administrative record compiled of the decision. The scope of judicial review is governed by Section 706 of the federal Administrative Procedures Act, which means the court will set aside the Council’s action if found to be:
 - arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law
 - contrary to constitutional right, power, privilege, or immunity
 - in excess of statutory jurisdiction, authority, or short of statutory right
 - without observance of procedure required by law

4. Substantive considerations and elements of the power plan - and relevant definitions

A. Substantive considerations and elements of the power plan

Basic directive/provisions:

- To reiterate, **Section 4d(1)** has the basic directive: Council is to adopt and transmit to Bonneville a “**regional conservation and electric power plan.**”
- **Sections 4(e) and 4(f)** then detail the substantive priorities, considerations, and elements that the power plan must contain and reflect.

Power plan is to include “cost effective” resources with certain priorities:

Section 4(e)(1) specifies that the power plan is to “give priority to resources which the Council determines to be cost effective” with priority to be given “first, to conservation; second, to renewable resources; third, to generating resources utilizing waste heat or generating resources of high fuel conversion efficiency; and fourth, to all other resources.” (Key definitions discussed below.)

Power plan is to include a resource scheme (or resource strategy) to reduce or meet Bonneville’s obligations:

Section 4(e)(2) then provides that the Council’s plan “shall set forth a general scheme for implementing conservation measures and developing resources pursuant to section 6 of this Act to reduce or meet the [Bonneville Power] Administrator’s obligations...” (See below on what those Bonneville obligations are.)

Considerations in developing this resource scheme:

Section 4(e)(2) also requires that the Council develop this resource scheme “with due consideration” by the Council for:

- environmental quality
- compatibility with the existing regional power system
- protection, mitigation, and enhancement of fish and wildlife and related spawning grounds and habitat, including sufficient quantities and qualities of flows for successful migration, survival, and propagation of anadromous fish
- other criteria the Council might set forth in the plan.

Specific plan elements:

Section 4(e)(3) then lists specific **elements** the Council is to include in the power plan “[t]o accomplish the priorities,” while leaving it to the Council to set forth the elements “in such detail as the Council determines to be appropriate”:

(A) **an energy conservation program to be implemented under this Act, including, but not limited to, model conservation standards [model conservation standards are further defined in Section 4(f)], along with a possible surcharge described in Sections 4(e)(3)(g) and 4(f)]**

(B) recommendations for research and development

- (C) a methodology for determining quantifiable environmental costs and benefits under section 3(4) of this Act [the definition of cost-effectiveness]
- (D) **a demand forecast of at least twenty years, to be developed in consultation with Bonneville, customers, states (including state agencies with ratemaking authority over electric utilities), and the public, “in such manner as the Council deems appropriate.”**

and

a forecast of power resources estimated by the Council to be required to meet the obligations of the Bonneville Power Administrator and the portion of the Administrator’s obligations the Council determines can be met by resources in each of the priority categories listed in paragraph [4(e)](1). The resource forecast:

- (i) shall include regional reliability and reserve requirements**
 - (ii) shall take into account the requirements of subsection (h) on the availability of resources to the Administrator [the fish and wildlife program], and**
 - (iii) shall include the approximate amounts of power the Council recommends should be acquired by Bonneville and may include, to the extent practicable, an estimate of the types of resources from which such power should be acquired**
- (E) an analysis of electricity reserve and reliability requirements and cost-effective methods of providing reserves designed to insure adequate electric power at the lowest probable cost
 - (F) the program adopted pursuant to subsection (h) [the fish and wildlife program]
 - (G) if the Council recommends surcharges pursuant to subsection (f) of this section, a methodology for calculating such surcharges

Model conservation standards:

- **Section 4(f)(1)** provides that the Council shall adopt “model conservation standards” into the plan “after consultation with the Administrator, states, political subdivisions, customers, and the public.” Model conservation standards to be included in the plan shall include (but not be limited to) standards applicable to:
 - (A) new and existing structures
 - (B) utility, customer, and governmental conservation programs
 - (C) other consumer actions for achieving conservation
- Model conservation standards shall:

- reflect geographic and climatic differences within the region and other appropriate considerations
 - be designed to produce all power savings that are cost-effective for the region and economically feasible for consumers, taking into account [available] financial assistance
- **Section 4(f)(2): surcharge authority**

B. Key definitions

Cost-effective: What makes a resource **cost-effective** under the Act? “Cost-effective” defined in **Section 3(4)**:

- To be cost-effective a resource must:
 - be **reliable and available**
 - meet or reduce demand of the “consumers of the customers” at “an **estimated incremental system cost** no greater than that of the least-cost similarly reliable and available alternative measure or resource”
- **“System cost”** is then defined to mean “an estimate of all direct costs of a measure or resource over its effective life,” including, “among other factors”:
 - cost of distribution and transmission to the consumer, if applicable
 - waste disposal costs
 - end-of-cycle costs
 - fuel costs (including projected increases)
 - such quantifiable environmental costs and benefits as the Administrator determines, on the basis of a methodology developed by the Council as part of the plan are directly attributable to such measure or resource
- **Edge to conservation.** The “estimated incremental system cost” of any conservation measure is not to be considered greater than any nonconservation resource unless in excess of 110% of the incremental system cost of the nonconservation resource.

“Resource” (Section 3(19)): “Resource” means--

- (A) electric power, including the actual or planned electric power capability of generating facilities, or
- (B) actual or planned load reduction resulting from direct application of a renewable energy resource by a consumer, or from a conservation measure.

“Electric power” (Section 3(9)): “Electric power” means electric peaking capacity, or electric energy, or both.

“Conservation” (Section 3(3)): “Conservation” means any reduction in electric power consumption as a result of increases in the efficiency of energy use, production, or distribution.

“Renewable resource” (Section 3(16)) “Renewable resource” means a resource which utilizes solar, wind, hydro, geothermal, biomass, or similar sources of energy and which either is used for electric power generation or will reduce the electric power requirements of a consumer, including by direct application.

“Reserves” (Section 3(17)) “Reserves” means the electric power needed to avert particular planning or operating shortages for the benefit of firm power customers of the Administrator and available to the Administrator (A) from resources or (B) from rights to interrupt, curtail, or otherwise withdraw, as provided by specific contract provisions, portions of the electric power supplied to customers.

5. Relationship of the Council's power plan to Bonneville resource acquisitions

A. At Bonneville: By Section 4(d)(2) and Sections 6(a) through 6(c) of the Act, Bonneville is to act consistent with the Council's power plan in making decisions to acquire new resources.

Context and concept at time of the passage of the Act:

As will be discussed at other times, in the Northwest Power Act Congress envisioned that Bonneville, the federal power marketing agency selling at wholesale the electrical power produced by the Federal Columbia River Power System and "federal base system" resources (e.g., WNP-2), would also be a major engine (or the major engine) for adding new resources to the region's power system as needed by Bonneville's customers.

Bonneville resource acquisition authority:

- **Section 5** of the Act requires Bonneville to offer power sales contracts to public and private utilities in the region and others, without limitation to the amount in Bonneville's federal base system
- **Section 6** of the Act then authorizes and obligates Bonneville to **acquire sufficient resources** to meet its obligations
- Section 6 resource acquisition authority includes:
 - **Conservation resources.** Section 6(a) obligates Bonneville to acquire conservation and implement such conservation measures "as the Administrator determines are consistent with the [Council's power] plan."
 - **Generating resources.** Section 6(b) then requires Bonneville to acquire "sufficient resources":
 - (A) to meet the agency's "contractual obligations" "after taking into account planned savings from [the conservation] measures"; and
 - (B) "to assist [the agency] in meeting the requirements of section 4(h) of the Act" [that is, the fish and wildlife provisions]
 - **"Major" resources.** Section 6(c) provides additional specific procedures for acquiring "major" resources, defined in Section 3(12) to mean resources with a planned capability greater than 50 aMW and to be acquired for more than five years.

Bonneville's resource decisions to be consistent with the Council's power plan:

Sections 4(d)(2) and 6(a), 6(b), and 6(c) tie Bonneville's acquisition of new resources for these purposes directly to the Council's power plan by requiring that Bonneville's conservation and generating resource acquisitions be consistent with the Council's power plan, with certain narrowly specified exceptions.

B. At the Council: And so, what is the Council to include in the power plan concerning Bonneville's resource acquisitions? See Sections 4(e)(2), 4(e)(3)(A), 4(e)(3)(D) in particular.

- **Section 4(e)(2)** provides that the Council's plan "shall set forth a general scheme for implementing conservation measures and developing resources pursuant to section 6 of this Act *to reduce or meet the [Bonneville Power] Administrator's obligations.*"
- **Section 4(e)(3)(A)** then provides the power plan is to contain "an energy conservation program to be implemented under this [Act]" - that is, to be implemented by Bonneville
- **Section 4(e)(3)(D)** also provides the power plan is to contain, along with a "demand forecast of at least twenty years,":

"a forecast of power resources estimated by the Council to be required to meet [Bonneville's] obligations and the portion of such obligations the Council determines can be met by resources in each of the priority categories referred to in paragraph [4(e)](1). The resource] forecast:

(i) shall include regional reliability and reserve requirements,

(ii) shall take into account the effect, if any, of the requirements of subsection (h) [the fish and wildlife program] on the availability of resources to the Administrator, and

(iii) shall include the approximate amounts of power the Council recommends should be acquired by Bonneville on a long-term basis and may include, to the extent practicable, an estimate of the types of resources from which such power should be acquired."

6. Relationship of the Council's power plan to resource decisions by others than Bonneville

Resource acquisition decisions by others:

The Council's power plan is influential in the resource decisions of the region's non-federal utilities and in the decisions to review resource choices by the states' utility commissions . With the reminder that the only legal link *in the Northwest Power Act* to the power plan is *to Bonneville's* new resource acquisition decisions, and to Bonneville's authority to impose a surcharge recommended by the Council, under Section 4(f)(2)).

I-937 in Washington:

Washington voters, in making I-937 part of Washington state law, have now tied a required analysis by Washington utilities of conservation potential to the Council's *conservation methodology* (not the plan's resource strategy). This is not a legal responsibility of the Council under federal law, but of the utilities in Washington under state law.

Northwest Power Act of 1980

Excerpts from Section 2 (purposes), Section 3 (definitions), Section 4(c)(11-13) (advisory committees), Sections 4(d-g) (power plan), Sections 6(a-c) (Bonneville resource acquisitions)

Section 2: Purposes

Section 2 The purposes of this Act, together with the provisions of other laws applicable to the Federal Columbia River Power System, are all intended to be construed in a consistent manner. Such purposes are also intended to be construed in a manner consistent with applicable environmental laws. Such purposes are:

2(1) to encourage, through the unique opportunity provided by the Federal Columbia River Power System--

- 2(1)(A) conservation and efficiency in the use of electric power, and
- 2(1)(B) the development of renewable resources within the Pacific Northwest;

2(2) to assure the Pacific Northwest of an adequate, efficient, economical, and reliable power supply;

2(3) to provide for the participation and consultation of the Pacific Northwest States, local governments, consumers, customers, users of the Columbia River System (including Federal and State fish and wildlife agencies and appropriate Indian tribes), and the public at large within the region in--

2(3)(A) the development of regional plans and programs related to energy conservation, renewable resources, other resources, and protecting, mitigating, and enhancing fish and wildlife resources,

2(3)(B) facilitating the orderly planning of the region's power system, and

2(3)(C) providing environmental quality;

2(6) to protect, mitigate and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries, particularly anadromous fish which are of significant importance to the social and economic well-being of the Pacific Northwest and the Nation and which are dependent on suitable environmental conditions substantially obtainable from the management and operation of Federal Columbia River Power System and other power generating facilities on the Columbia River and its tributaries.

Section 3: Definitions

Section 3 As used in this Act, the term--

3(3) "Conservation" means any reduction in electric power consumption as a result of increases in the efficiency of energy use, production, or distribution.

3(4) [Cost-effective]

(A) "Cost-effective", when applied to any measure or resource referred to in this Act, means that such measure or resource must be forecast--

- (i)** to be reliable and available within the time it is needed, and
- (ii)** to meet or reduce the electric power demand, as determined by the Council or the Administrator, as appropriate, of the consumers of the customers at an estimated incremental system cost no greater than that of the least-cost similarly reliable and available alternative measure or resource, or any combination thereof.

(B) For purposes of this paragraph, the term "system cost" means an estimate of all direct costs of a measure or resource over its effective life, including, if applicable, the cost of distribution and transmission to the consumer and, among other factors, waste disposal costs, end-of-cycle costs, and fuel costs (including projected increases), and such quantifiable environmental costs and benefits as the Administrator determines, on the basis of a methodology developed by the Council as part of the plan, or in the absence of the plan by the Administrator, are directly attributable to such measure or resource.

(C) In determining the amount of power that a conservation measure or other resource may be expected to save or to produce, the Council or the Administrator, as the case may be, shall take into account projected realization factors and plant factors, including appropriate historical experience with similar measures or resources.

(D) For purposes of this paragraph, the "estimated incremental system cost" of any conservation measure or resource shall not be treated as greater than that of any nonconservation measure or resource unless the incremental system cost of such conservation measure or resource is in excess of 110 per centum of the incremental system cost of the nonconservation measure or resource.

3(5) "Consumer" means any end user of electric power.

3(7) "Customer" means anyone who contracts for the purchase of power from the Administrator pursuant to this Act.

3(9) "Electric power" means electric peaking capacity, or electric energy, or both.

3(12) "Major resource" means any resource that--

- (A) has a planned capability greater than fifty average megawatts, and
- (B) if acquired by the Administrator, is acquired for a period of more than five years.

3(16) "Renewable resource" means a resource which utilizes solar, wind, hydro, geothermal, biomass, or similar sources of energy and which either is used for electric power generation or will reduce the electric power requirements of a consumer, including by direct application.

3(17) "Reserves" means the electric power needed to avert particular planning or operating shortages for the benefit of firm power customers of the Administrator and available to the Administrator (A) from resources or (B) from rights to interrupt, curtail, or otherwise withdraw, as provided by specific contract provisions, portions of the electric power supplied to customers.

3(19) "Resource" means--

- (A) electric power, including the actual or planned electric power capability of generating facilities, or
- (B) actual or planned load reduction resulting from direct application of a renewable energy resource by a consumer, or from a conservation measure.

Section 4(c)(11-13) (advisory committees)

4(c)(11) The Council shall establish a voluntary scientific and statistical advisory committee to assist in the development, collection, and evaluation of such statistical, biological, economic, social, environmental, and other scientific information as is relevant to the Council's development and amendment of a regional conservation and electric power plan.

4(c)(12) The Council may establish such other voluntary advisory committees as it determines are necessary or appropriate to assist it in carrying out its functions and responsibilities under this Act.

4(c)(13) The Council shall ensure that the membership for any advisory committee established or formed pursuant to this section shall, to the extent feasible, include representatives of, and seek the advice of, the Federal, and the various regional, State, local, and Indian Tribal Governments, consumer groups, and customers.

Sections 4(d) through 4(g): Power Plan

4(d)(1) Within two years after the Council is established and the members are appointed pursuant to subsection (a) or (b) of this section, the Council shall prepare, adopt, and promptly transmit to the Administrator a regional conservation and electric power plan. The adopted plan, or any portion thereof, may be amended from time to time, and shall be reviewed by the Council not less frequently than once every five years. Prior to such adoption, public hearings shall be held in each Council member's State on the plan or substantial, nontechnical amendments to the plan proposed by the Council for adoption. A public hearing shall also be held in any other State of the region on the plan or amendments thereto, if the Council determines that the plan or amendments would likely have a substantial impact on that State in terms of major resources which may be developed in that State and which the Administrator may seek to acquire. Action of the Council under this subsection concerning such hearings shall be subject to section 553 of title 5, United States Code and such procedure as the Council shall adopt.

4(d)(2) Following adoption of the plan and any amendment thereto, all actions of the Administrator pursuant to section 6 of this Act shall be consistent with the plan and any amendment thereto, except as otherwise specifically provided in this Act.

4(e)(1) The plan shall, as provided in this paragraph, give priority to resources which the Council determines to be cost-effective. Priority shall be given: first, to conservation; second, to renewable resources; third, to generating resources utilizing waste heat or generating resources of high fuel conversion efficiency; and fourth, to all other resources.

4(e)(2) The plan shall set forth a general scheme for implementing conservation measures and developing resources pursuant to section 6 of this Act to reduce or meet the Administrator's obligations with due consideration by the Council for (A) environmental quality, (B) compatibility with the existing regional power system, (C) protection, mitigation, and enhancement of fish and wildlife and related spawning grounds and habitat, including sufficient quantities and qualities of flows for successful migration, survival, and propagation of anadromous fish, and (D) other criteria which may be set forth in the plan.

4(e)(3) To accomplish the priorities established by this subsection, the plan shall include the following elements which shall be set forth in such detail as the Council determines to be appropriate:

- (A) an energy conservation program to be implemented under this Act, including, but not limited to, model conservation standards;
- (B) recommendation for research and development;
- (C) a methodology for determining quantifiable environmental costs and benefits under section 3(4);
- (D) a demand forecast of at least twenty years (developed in consultation with the Administrator, the customers, the States, including State agencies with ratemaking authority over electric utilities, and the public, in such manner as the Council deems appropriate) and a forecast of power resources estimated by the Council to be required to meet the Administrator's obligations and the portion of such obligations the Council determines can be met by resources in each of the priority categories referred to in paragraph (1) of this subsection which forecast (i) shall include regional reliability and reserve requirements, (ii) shall take into account the effect, if any, of the requirements of subsection (h) on the availability of resources to the Administrator, and (iii) shall include the approximate amounts of power the Council recommends should be acquired by the

Administrator on a long-term basis and may include, to the extent practicable, an estimate of the types of resources from which such power should be acquired;

- (E) an analysis of reserve and reliability requirements and cost-effective methods of providing reserves designed to insure adequate electric power at the lowest probable cost;
- (F) the program adopted pursuant to subsection (h); and
- (G) if the Council recommends surcharges pursuant to subsection (f) of this section, a methodology for calculating such surcharges.

4(e)(4) The Council, taking into consideration the requirement that it devote its principal efforts to carrying out its responsibilities under subsections (d) and (h) of this section, shall undertake studies of conservation measures reasonably available to direct service industrial customers and other major consumers of electric power within the region and make an analysis of the estimated reduction in energy use which would result from the implementation of such measures as rapidly as possible, consistent with sound business practices. The Council shall consult with such customers and consumers in the conduct of such studies.

4(f)(1) Model conservation standards to be included in the plan shall include, but not be limited to, standards applicable to (A) new and existing structures, (B) utility, customer, and government conservation programs, and (C) other consumer actions for achieving conservation. Model conservation standards shall reflect geographic and climatic differences within the region and other appropriate considerations, and shall be designed to produce all power savings that are cost-effective for the region and economically feasible for consumers, taking into account financial assistance made available to consumers under section 6(a) of this Act. These model conservation standards shall be adopted by the Council and included in the plan after consultation, in such manner as the Council deems appropriate, with the Administrator, States, and political subdivisions, customers of the Administrator, and the public.

4(f)(2) The Council by a majority vote of the members of the Council is authorized to recommend the Administrator a surcharge and the Administrator may thereafter impose such a surcharge, in accordance with the methodology provided in the plan, on customers for those portions of their loads within the region that are within States or political subdivisions which have not, or on the Administrator's customers which have not, implemented conservation measures that achieve energy savings which the Administrator determines are comparable to those which would be obtained under such standards. Such surcharges shall be established to recover such additional costs as the Administrator determines will be incurred because such projected energy savings attributable to such conservation measures have not been achieved, but no case may such surcharges be less than 10 per centum or more than 50 per centum of the Administrator's applicable rates for such load or portion thereof.

4(g)(1) To insure widespread public involvement in the formulation of regional power policies, the Council and Administrator shall maintain comprehensive programs to--

- (A) inform the Pacific Northwest public of major regional power issues,
- (B) obtain public views concerning major regional power issues, and
- (C) secure advice and consultation from the Administrator's customers and others.

4(g)(2) In carrying out the provisions of this section, the Council and the Administrator shall--

- (A) consult with the Administrator's customers;
- (B) include the comments of such customers in the record of the Council's proceedings; and
- (C) recognize and not abridge the authorities of State and local governments, electric utility systems, and other non-Federal entities responsible to the people of the Pacific Northwest for the planning, conservation, supply, distribution, and use of electric power and the operation of electric generating facilities.

4(g)(3) In the preparation, adoption, and implementation of the plan, the Council and the Administrator shall encourage the cooperation, participation, and assistance of appropriate Federal agencies, State entities, State political subdivisions, and Indian tribes. The Council and the Administrator are authorized to contract, in accordance with applicable law, with such agencies, entities, tribes, and subdivisions individually, in groups, or through associations thereof to (A) investigate possible measures to be included in the plan, (B) provide public involvement and information regarding a proposed plan or amendment thereto, and (C) provide services which will assist in the implementation of the plan. In order to assist in the implementation of the plan, particularly conservation, renewable resource, and fish and wildlife activities, the Administrator, when requested and subject to available funds, may provide technical assistance in establishing conservation, renewable resource, and fish and wildlife objectives by individual States or subdivisions thereof or Indian tribes. Such objectives, if adopted by a State or subdivision thereof or Indian tribes, may be submitted to the Council and the Administrator for review, and upon approval by the Council, may be incorporated as part of the plan.

Section 6: Conservation and Resource Acquisition

6(a)

- (1) The Administrator shall acquire such resources through conservation, implement all such conservation measures, and acquire such renewable resources which are installed by a residential or small commercial consumer to reduce load, as the Administrator determines are consistent with the plan, or if no plan is in effect with the criteria of section 4(e)(1) and the considerations of section 4(e)(2) and, in the case of major resources, in accordance with subsection (c) of this section. Such conservation measures and such resources may include, but are not limited to--
 - (A) loans and grants to consumers for insulation or weatherization, increased system efficiency, and waste energy recovery by direct application,
 - (B) technical and financial assistance to, and other cooperation with, the Administrator's customer and governmental authorities to encourage maximum cost-effective voluntary conservation and the attainment of any cost-effective conservation objectives adopted by individual States or subdivisions thereof,
 - (C) aiding the Administrator's customers and governmental authorities in implementing model conservation standards adopted pursuant to section 4(f), and
 - (D) conducting demonstration projects to determine the cost effectiveness of conservation measures and direct application of renewable energy resources.
- (2) In addition to acquiring electric power pursuant to section 5(c), or on a short-term basis pursuant to section 11(b)(6)(i) of the Federal Columbia River Transmission System Act, the Administrator shall acquire, in accordance with this section, sufficient resources--
 - (A) to meet his contractual obligations that remain after taking into account planned savings from measures provided for in paragraph (1) of this subsection, and
 - (B) to assist in meeting the requirements of section 4(h) of this Act.

The Administrator shall acquire such resources without considering restrictions which may apply pursuant to section 5(b) of this Act.

6(b)

- (1) Except as specifically provided in this section, acquisition of resources under this Act shall be consistent with the plan, as determined by the Administrator.
- (2) The Administrator may acquire resources (other than major resources) under this Act which are not consistent with the plan, but which are determined by the Administrator to be consistent with the criteria of section 4(e)(1) and the considerations of section 4(e)(2) of this Act.
- (3) If no plan is in effect, the Administrator may acquire resources under this Act which are determined by the Administrator to be consistent with the criteria of section 4(e)(1) and the considerations of section 4(e)(2) of this Act.
- (4) The Administrator shall acquire any non-Federal resources to replace Federal base system resources only in accordance with the provisions of this section. The Administrator shall

include in the contracts for the acquisition of any such non-Federal replacement resources provisions which will enable him to ensure that such non-Federal replacement resources are developed and operated in a manner consistent with the considerations specified in section 4(e)(2) of this Act.

- (5) Notwithstanding any acquisition of resources pursuant to this section, the Administrator shall not reduce his efforts to achieve conservation and to acquire renewable resources installed by a residential or small commercial consumer to reduce load, pursuant to subsection (a)(1) of this section.

6(c)

- (1) For each proposal under subsection (a), (b), (f), (h) or (l) of this section to acquire a major resource, to implement a conservation measure which will conserve an amount of electric power equivalent to that of a major resource, to pay or reimburse investigation and preconstruction expenses of the sponsors of a major resource, or to grant billing credits or services involving a major resource, the Administrator shall--

- (A) publish notice of the proposed action in the Federal Register and provide a copy of such notice to the Council, the Governor of each State in which facilities would be constructed or a conservation measure implemented, and the Administrator's customers;
- (B) not less than sixty days following publication of such notice, conduct one or more public hearings, presided over by a hearing officers, at which testimony and evidence shall be received, with opportunity for such rebuttal and cross-examination as the hearing officer deems appropriate in the development of an adequate hearing record;
- (C) develop a record to assist in evaluating the proposal which shall include the transcript of the public hearings, together with exhibits, and such other materials and information as may have been submitted to, or developed by, the Administrator; and
- (D) following completion of such hearings, promptly provide to the Council and make public a written decision that includes, in addition to a determination respecting the requirements of subsection (a), (b), (f), (h), (l), or (m) of this section, as appropriate--
- (i) if a plan is in effect, a finding that the proposal is either consistent or inconsistent with the plan or, notwithstanding its inconsistency with the plan, a finding that it is needed to meet the Administrator's obligations under this Act, or
- (ii) if no plan is in effect, a finding that the proposal is either consistent or inconsistent with the criteria of section 4(e)(1) and the considerations of section 4(e)(2) of this Act or notwithstanding its inconsistency, a finding that it is needed to meet the Administrator's obligations under this Act.

In the case of subsection (f) of this section, such decision shall be treated as satisfying the applicable requirements of this subsection and of subsection (f) of this section, if it includes a finding of probable consistency, based upon the Administrator's evaluation of information available at the time of completion of the hearing under this paragraph. Such decision shall include the reasons for such finding.

- (2) Within sixty days of the receipt of the Administrator's decision pursuant to paragraph (1)(D) of this subsection, the Council may determine by a majority vote of all members of the Council, and notify the Administrator--

- (A) that the proposal is either consistent or inconsistent with the plan, or

- (B) if no plan is in effect, that the proposal is either consistent or inconsistent with the criteria of section 4(e)(1) and the considerations of section 4(e)(2).
- (3) The Administrator may not implement any proposal referred to in paragraph (1) that is determined pursuant to paragraph (1) or (2) by either the Administrator or the Council to be inconsistent with the plan or, if no plan is in effect, with the criteria of section 4(e)(1) and the considerations of section 4(e)(2)--
 - (A) unless the Administrator finds that, notwithstanding such inconsistency, such resource is needed to meet the Administrator's obligations under this Act, and
 - (B) until the expenditure of funds for that purpose has been specifically authorized by Act of Congress enacted after the date of the enactment of this Act.
- (4) Before the Administrator implements any proposal referred to in paragraph (1) of this subsection, the Administrator shall--
 - (A) submit to the appropriate committees of the Congress the administrative record of the decision (including any determination by the Council under paragraph (2)) and a statement of the procedures followed or to be followed for compliance with the National Environmental Policy Act of 1969.
 - (B) publish notice of the decision in the Federal Register, and
 - (C) note the proposal in the Administrator's annual or supplementary budget submittal made pursuant to the Federal Columbia River Transmission System Act (16 U.S.C. 838 and following).

The Administrator may not implement any such proposal until ninety days after the date on which such proposal has been noted in such budget or after the date on which such decision has been published in the Federal Register, whichever is later.
- (5) The authority of the Council to make a determination under paragraph (2)(B) if no plan is in effect shall expire on the date two years after the establishment of the Council.

Introduction on modeling and analytics

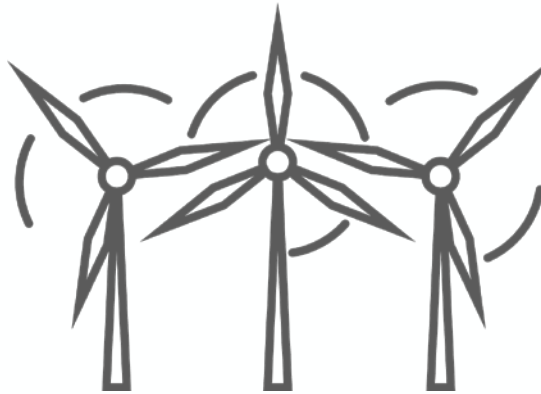
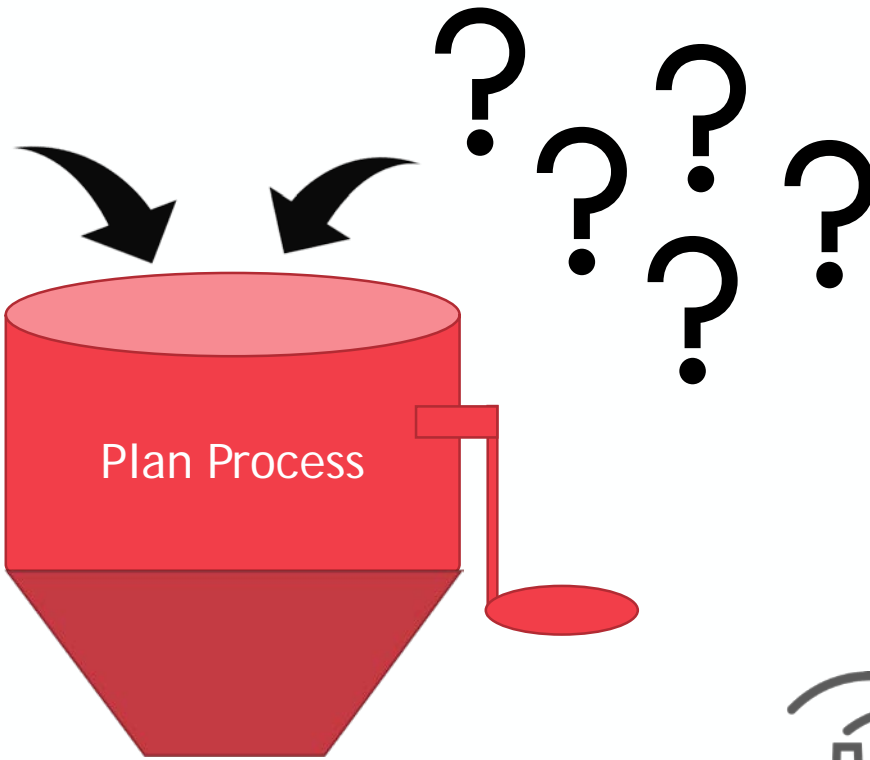


THE 2021
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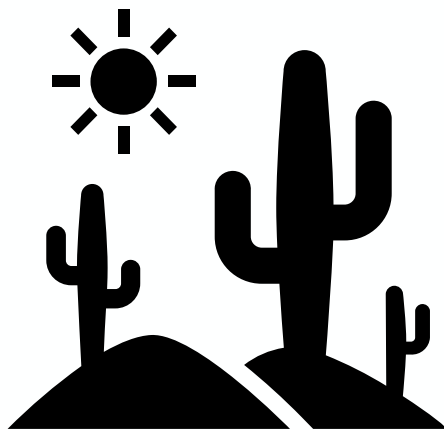
FOR A SECURE & AFFORDABLE
ENERGY FUTURE

“There are two things you are better off not watching in the making: sausages and econometric estimates.” - **Edward Leamer**





What is a **scenario** in the Council's Power Plan?



High-level questions help build a future **landscape** which we examine and compare to alternative outlooks to **learn** and create a narrative that informs the audience for the Power Plan



