



TO: Commissioners Mital, Schlossberg, Helgeson, Brown and Carlson
FROM: Susan Ackerman, Chief Energy Officer; Megan Capper, Portfolio Management Supervisor
DATE: January 24, 2020
SUBJECT: 2021 Integrated Resource Plan Scenarios and Engagement Plan
OBJECTIVE: Inform and Seek Concurrence

ISSUE

In response to a rapidly changing utility environment, staff is modernizing our approach to Electricity Supply Planning (ESP). The goal is to make it more robust, dynamic, routine, and useful. Part of the ESP framework is the development of EWEB's next Integrated Resource Plan (IRP) to be completed in 2021.

This memo focuses on the Integrated Resource Plan, and is intended to:

- Provide context for how the IRP relates to the broader Electricity Supply Planning function
- Summarize the results of the IRP Scoping phase and staff's recommended scope and future scenarios
- Share the public communication and engagement strategy
- Discuss where we are in the IRP process and next steps

BACKGROUND

Last fall we met with individual Board members to initiate the IRP Scoping phase. We presented information to develop a shared understanding of key IRP concepts, asked you to identify key issues and questions facing the utility to shape the scope of the 2021 IRP, and explored your interests regarding public engagement and communication.

In addition to these individual Commissioner discussions, we met with several internal groups (more than 150 people) to understand issues and questions from the perspective of their roles (operations, finance, trading, I.S., customer service, etc.), many of whom are also EWEB customers.

We heard several strong and consistent themes during this outreach, which staff then sorted and prioritized to develop a 2021 IRP Scope and the corresponding Scenarios discussed in this memo. Themes and questions that are not in-scope for 2021 have been documented for subsequent IRP cycles.

DISCUSSION

The information below is intended to provide context for how the IRP relates to the broader Electricity Supply Planning function.

Electricity Supply Planning (ESP)

Electric Supply Planning is an overarching framework, that helps utilities understand the resources, technology and infrastructure that will be needed to meet customers' future electricity needs. The process is analogous to supply chain management—the active optimizing of supply-side activities to maximize customer value.

Some components of Electricity Supply Planning are:

- Exploring customer products and cost of service
- Analyzing long-term, strategic portfolio options (Integrated Resource Planning)
- Valuing stand-alone generation assets

Electric Supply Planning is key to the success of EWEB's strategic priorities of facilitating more flexible and efficient energy consumption, synchronizing supply and demand, and creating a more resilient electric grid.

Integrated Resource Plan (IRP)

An Integrated Resource Plan is a subset of Electricity Supply Planning. The process allows us to align portfolio planning with our customers' values and key emerging issues in a regional context. A portfolio refers to our bundle of resources (supply and demand) that we own or contract for to meet our customers' electricity needs.

Integrated Resource Planning requires exploring and balancing tradeoffs among many factors such as environmental impact, affordability, risk, reliability, policy compliance, etc. under multiple futures (scenarios). The IRP is a long-term (20-year) strategic view, and will be completed on a 2-3 year cycle.

The outcome is an action plan of next steps and priorities to be undertaken by the utility leading up to the next IRP cycle. Action plans are flexible and iterative in order to track with a changing utility landscape.

Electricity Supply Planning	Integrated Resource Plan
<p>EWEB is in the process of developing a comprehensive ESP function in order to:</p> <ul style="list-style-type: none">• Prepare for changes in power supply options in the coming decade• Increase customer choice of electricity products• Put EWEB's planning activities in a regional perspective <p>The ESP function is broader than an IRP alone. It includes:</p>	<p>The goal of the IRP is to evaluate alternative supply- and demand-side resource options to serve customers.</p> <p>The IRP is a scenario-based study, designed to evaluate portfolios under different futures.</p> <p>IRP scenarios should be designed to answer key questions and inform decision-making.</p>

<ul style="list-style-type: none"> • Integrated Resource Planning • Asset valuation (e.g. Leaburg & Walterville) • Retail product development, cost allocation and associated rates <p>Electricity Supply Planning is an on-going process.</p>	<p>Not all questions can be answered in a single IRP cycle; prioritization is necessary.</p>
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Other components of Electricity Supply Planning

As mentioned, the IRP is one component of Electricity Supply Planning. Following are some timely examples of separate, coordinated analyses to be undertaken outside the traditional IRP framework:

Leaburg/Walterville Asset Valuation

Leaburg/Walterville is an example of a specific generation resource that requires action before the final 2021 IRP. The analysis will be a coordinated effort between generation, power planning and finance. Outcomes will be incorporated into the 2021 IRP to understand portfolio impacts (RPS obligation, risk due to market reliance, hedging practices, resource adequacy, etc.).

Future customer products and services

Within the next few years we look forward to offering new products and services that give customers greater choice, more control over utility bills, and increased options for managing energy use and carbon footprint. In the IRP, we will explore new customer product options, and how they could affect our future supply decisions.

Where we are now: Completing IRP Scope phase

The information below is intended to summarize the results of the IRP Scoping phase and staff’s recommended scope and future scenarios.

In fall 2019, the IRP Project Team interviewed Commissioners and staff to identify key issues and questions the IRP could study. We parsed the issues into the following themes, which are covered in more detail in Attachment 1.

IRP: Summary Themes	
Electrification	Carbon Mitigation
Evolving Technology	Emerging Markets
Future Business Model	Reliability & Resiliency
Prices and Rate Structure	Future impacts of Climate Change

Staff worked with a consultant to narrow and prioritize the issues, creating an actionable scope for the 2021 IRP. Priority is given to themes that were clearly *meaningful* to stakeholders, *relevant* to the current landscape, and *timely* for the 2021 IRP cycle:

2021 IRP Scope	
1	Electrification – EV adoption, space and water heating
2	Carbon Mitigation – Legislation (market vs. mandated)

3	Evolving Technology – Changes in energy efficiency, battery storage, distributed generation, demand response
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Summary Statement of 2021 IRP Scope
 How will carbon mitigation, electrification, and evolving technology shape EWEB’s future portfolio?

Some outstanding items from previous IRP cycles will become part of the scope for future IRPs. Example future focus areas might include:

- BPA Contract – Exploring future BPA product options and contract optimization goals
- Future Impacts of Climate Change – Stream flow and temperature changes, impacts on hydro
- Reliability & Resiliency – Issues around resource adequacy, risk of reliance on markets
- Emerging Markets – The future value of hydro, leveraging regional markets
- Prices & Rate Structure – Incentives and other financial tools for managing demand
- Others – Additional potential challenges or opportunities that may arise in future IRP cycles

2021 IRP Scenarios

Scenarios are narratives based on the identified IRP Scope. They represent future worlds outside of EWEB’s control that might affect how EWEB meets customers’ electricity needs over the next 20 years, in the context of both local and regional landscapes.

The full list of potential future scenarios considered, with additional context, is reflected in Attachment 2.

As part of the 2021 IRP, EWEB will explore the following scenarios:

2021 IRP Scenarios	
1. Steady State	Existing state policies Business-as-usual Current trends in electrification continue
2. Climate Forward	Carbon policies drive cross-sector electrification Transportation sector is heavily electrified Space and water-heating electrification Advances in code standards & energy efficiency across all major sectors
3. Sluggish Electrification	Carbon policy focuses on electric sector only Lack of price signals Continued use of gas in building sector Transportation sector dominated by gasoline powered vehicles

Next Steps in IRP Process and Timeline

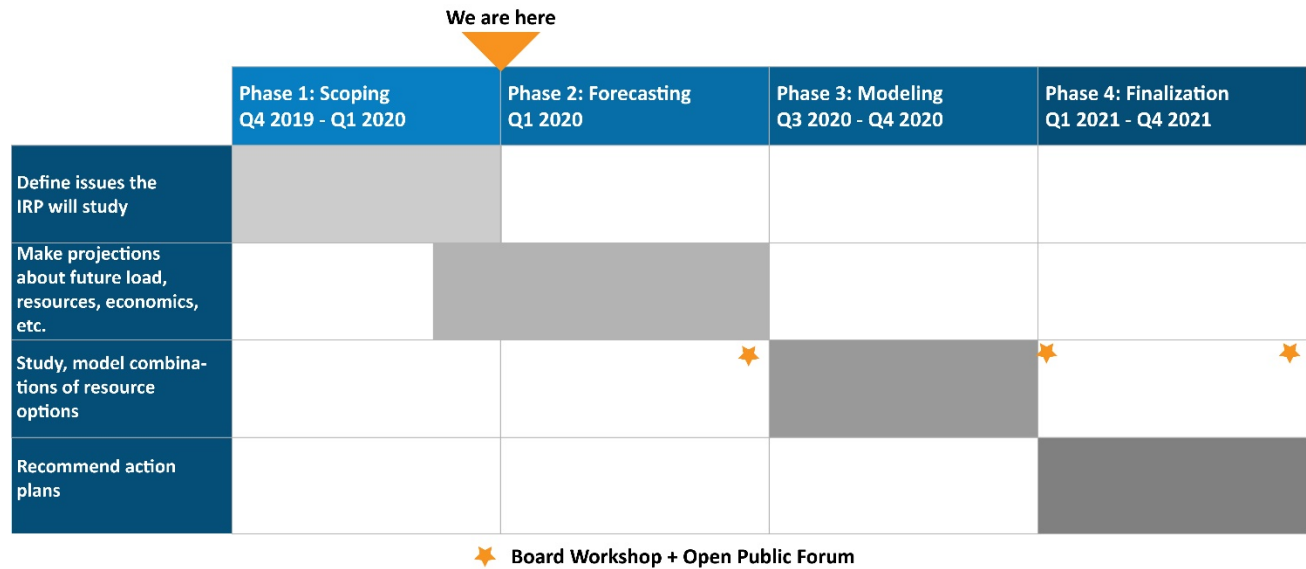
The information below is intended to outline where we are in the IRP process and next steps.

As shown in the Gantt chart below, the next phase is Forecasting future load changes, customer

product offerings, policy implementations, resource options, fuel costs, and other data points.

These inputs will align with the Scenarios determined in the Scoping phase, and will be presented to Commissioners and discussed prior to the April 14, 2020 Board Work Session.

After receiving feedback from the Board, we will begin Modeling various combinations of supply and demand resource options (portfolios).



Summary of Near-Term Board Next Steps	
Date	Activity
February - March, 2020	Board will receive Background materials to inform discussions in preparation for the April Board Work Session
April 6-April 9, 2020	Board Member discussions with staff
April 14, 2020	Board Work Session

Future Board work sessions and meetings are tentatively planned as follows:

- Q1 2021 - Preliminary Results
- June 2021 – Final Results
- Q4 2021 – IRP Action Plan for Board approval

Communication & Engagement Plan

The Communication & Engagement Plan establishes a framework for informing and involving stakeholders to help guide our decision-making in a manner that supports our mission, vision, values and strategic priorities.

In individual meetings with Commissioners last fall, we heard consistent themes around public engagement, including:

- Use tools and methods that engage all customers, not just highly-interested
- Respect the Board’s role as elected policy-makers, and give commissioners opportunity to hear *informed* public feedback to support decision-making
- Create an open and transparent process

The overarching goals and principles of the plan were shaped by Board input, EWEB’s Strategic Plan, and best practices from other utilities:

Overarching Goals/Desired Results	Principles/Approach
Ensure utility decisions are informed by relevant stakeholder input.	Create inclusive and effective opportunities for meaningful, actionable public input.
Begin laying groundwork for Phase II of EWEB’s strategic plan (create consumption flexibility).	Use compelling messages and themes to simplify complex ideas and make information stick.
Ensure that customers who choose to engage in the process feel heard.	<p>Cast a broad net, leveraging a variety of traditional and innovative communication and engagement methods.</p> <p>Close the feedback loop by documenting what we hear and letting participants know how their feedback influenced the work.</p>

For the purpose of this plan, stakeholders are defined and categorized as:

- Observers - Customers, general public
- Interested – Civic groups, key accounts
- Highly interested – Special interest groups, Chamber of Commerce

Public Engagement Tools

At this stage, we are focusing on three primary ways for the public to provide meaningful input to the IRP:

- **Board workshops** - While this channel is open to all customers and will be widely advertised, the dominant audience is highly-interested customers who are already more informed and engaged in electricity supply planning.
- **Website** – We already have some content on our website which will enhance the ways for our customers to stay informed and give them the ability to submit comments and respond to specific questions posed by the utility. The website will also be an important tool for summarizing and sharing public input received throughout the process.
- **Direct outreach** – Management and project team members will attend neighborhood/civic/special interest group meetings and other events. These events provide opportunities to inform as well as engage.

Board Workshops

We anticipate holding three workshops over the next year and half. The workshops are off-cycle from regular board meetings and scheduled around key project milestones. Workshops will be structured to facilitate a learning and listening process.

The proposed format includes:

- 1) Presentation from staff
- 2) Facilitated discussion between Commissioners and staff
- 3) Open forum with informal public comment and Q&A

Additional communication tools

Throughout the course of the IRP, EWEB will leverage a variety of communication tools including:

- Project website (eweb.org/irp)
- Presentations and events
- Interested parties email list
- Printed materials
- Other existing tools such as Pipeline newsletter, social media and traditional media

TRIPLE BOTTOM LINE (TBL) ASSESSMENT

Future portfolio options will be evaluated based on TBL attributes (environmental, social, economic), as well as other characteristics that are important to the utility and our customers (e.g. peak fit, local resilience). Attributes and tradeoffs will be a focus of Board discussions toward the end of Phase 3 Modeling.

RECOMMENDATION/REQUESTED BOARD ACTION

No action at this time. Staff is seeking alignment with the Board on the following topics:

1. Scope and scenario definition
2. Engagement strategy
3. Format for Board Workshops

Attachment 1

EWEB 2021 IRP: Summary of Themes and Comments

Results from Board of Commissioners and EWEB Staff Engagement Sessions Q4 2019, used to inform 2021 IRP Scope.

Theme	Examples of Comments	Notes
Themes that are most relevant, pressing, impactful and timely for the 2021 IRP		
Electrification	<ul style="list-style-type: none"> Recommendations to evaluate load impacts from fuel switching scenarios, including transportation, space & hot water heating 	<ul style="list-style-type: none"> Included in 2021 IRP Scope.
Carbon mitigation	<ul style="list-style-type: none"> Recommendations to evaluate NW states carbon legislation including Oregon’s carbon tax/cap & trade/100% clean ballot measures 	<ul style="list-style-type: none"> Included in 2021 IRP Scope.
Evolving Technology	<ul style="list-style-type: none"> Emphasis on maintaining a low-carbon portfolio (don’t increase current emissions) 	<ul style="list-style-type: none"> Included. Relates to future customer products.
	<ul style="list-style-type: none"> Questions about the future potential/role of DER, including demand response programs, rooftop and community solar 	<ul style="list-style-type: none"> May be included. Resources may need to be procured to provide products.
	<ul style="list-style-type: none"> Recommendations to maintain or increase energy efficiency, especially in the rental housing stock. 	<ul style="list-style-type: none"> Included. Energy Efficiency evaluated as demand-side resource choice (may not be specific to rental stock).
	<ul style="list-style-type: none"> Questions about future role of technologies like hydrogen and modular nuclear. 	<ul style="list-style-type: none"> May be included. Resources may need to be procured to provide products.
	<ul style="list-style-type: none"> Questions about future role of storage (utility scale and customer scale. 	<ul style="list-style-type: none"> Included. Will be part of load shaping supply resources.
	<ul style="list-style-type: none"> Interest in optimizing current resources to avoid adding new. 	<ul style="list-style-type: none"> Included. Optimal shaping of Carmen Smith.
	<ul style="list-style-type: none"> What are the tradeoffs between different resource types, affordability, reliability, clean attributes and other attributes. 	<ul style="list-style-type: none"> Included.

Themes that received discussion and will be more timely to address in a future IRP

Future business model	<ul style="list-style-type: none"> • Questions about reliance on local resources. 	<ul style="list-style-type: none"> • Not directly included in 2021 IRP. Resources may need to be procured to provide products and could be local.
	<ul style="list-style-type: none"> • Various comments regarding tradeoffs between owning/operating, purchasing LT contracts, buying/selling in the markets. 	<ul style="list-style-type: none"> • Not directly included. Resources may need to be procured to provide products and could be local, contracted, or market purchases.
Markets	<ul style="list-style-type: none"> • Questions about future value of hydro & capacity. 	<ul style="list-style-type: none"> • Not directly included. However, future wholesale markets will be modeled based on scenarios and used as a basis for portfolio evaluation. Natural gas, hydro and load sensitivities will impact future values.
	<ul style="list-style-type: none"> • Questions about risk hedging policy. 	<ul style="list-style-type: none"> • EWEB policies around hedging and risk tolerance will not be directly modeled, however, IRP analysis may help inform the conversation.
	<ul style="list-style-type: none"> • Questions about leveraging EIM/EDAM and their impact on EWEB/BPA. 	<ul style="list-style-type: none"> • Potential future market constructs such as CAISO energy Imbalance and day ahead will not be modeled at this time.
Reliability & Resiliency	<ul style="list-style-type: none"> • Questions about how reliable should we be/Resource Adequacy. 	<ul style="list-style-type: none"> • Regional RA evaluation is ongoing and the impact to EWEB may not be known for a couple of years.
	<ul style="list-style-type: none"> • Questions about role/importance of local resources (owned hydro projects, local solar, local storage). 	<ul style="list-style-type: none"> • Not directly included. Future resources may need to be procured to provide products and could be local, contracted, or market purchases.
	<ul style="list-style-type: none"> • Questions about transmission infrastructure impacts/investments. 	<ul style="list-style-type: none"> • Not directly included. Existing regional transmission limits observed in modeling. Any new resource contracts will require transmission. There may be future analytics around EWEB's distribution system and electrification.
	<ul style="list-style-type: none"> • Question around how much and under what circumstances EWEB should rely on the markets to meet demand. 	<ul style="list-style-type: none"> • EWEB policies around hedging and risk tolerance will not be directly modeled; however, IRP analysis may help inform the conversation.

Prices and Rate Structure	<ul style="list-style-type: none"> • Recommendations to consider impacts to limited-income/underserved communities. 	<ul style="list-style-type: none"> • Not directly included. May be part of rate design discussion.
	<ul style="list-style-type: none"> • Questions about how “affordable” we should be. 	<ul style="list-style-type: none"> • All portfolio choices will have a cost and rate impact and will be calculated and presented. It will be up to management and the Board to decide ‘how’ affordable to be.
	<ul style="list-style-type: none"> • Questions about role of incentives/rate structures in managing demand. 	<ul style="list-style-type: none"> • Not directly included. Rate structure is a critical piece of synchronizing supply and demand. The IRP analysis can inform rate structure design.
Future impacts of Climate Change	<ul style="list-style-type: none"> • Recommendations to evaluate a range of climate change scenarios (extreme weather events, evolving peak conditions, snow pack/stream flow changes) 	<ul style="list-style-type: none"> • Runoff pattern changes are not directly included. Could be one-off analysis or included in future IRP. Load sensitives are included.
	<ul style="list-style-type: none"> • Questions about EWEB’s target/goal CO2 footprint 	<ul style="list-style-type: none"> • Not directly included. However, IRP modeling provides input to potential target levels.

Attachment 2

EWEB 2021 IRP: List of Future Potential Scenarios

Results from Board of Commissioners and EWEB Staff engagement Sessions Q4 2019

Scenario	Description	Decision
1. Steady State <i>(Reference)</i>	Existing policy, BAU load	Included in current scope, baseline scenario
2. Climate Forward <i>(High Carbon Abatement, High Load)</i>	Decarbonization of electric supply, increased load due to electrification and population growth	Included in the current scope, examines implications of expansion of EWEB's supply responsibility
3. Electrification Falters <i>(High Carbon Abatement, Low Load)</i>	Supply decarbonization, load growth muted due to lower electrification, load deflection and lower than expected population growth	Included in current scope, examines implications of supply decarbonization in isolation
4. Low Carbon Abatement, High Load	Load growth due to above factors, without additional supply decarbonization commitment	Not included, unlikely to occur.
5. High Climate Impacts	Reduced snowpack, higher summer loads, lower winter loads	Not included but a candidate for future analysis, will require intensive effort to develop appropriate assumptions.
6. BPA rate shock	BPA rates increase due to dam removal, privatization or significant treaty changes	Not included, does not inform near-term decision-making, analysis related to 2028 BPA contract renewals in queue for future IRP phases.
7. Regional markets	Regional resource adequacy program, emergence of RTO	Not included, details of regional RA program unlikely to be finalized within this IRP timeline, important candidate for future analysis.