Exh. MAB-2
Dockets UE-220066, UG-220067, UG-210918
Witness: Molly A. Brewer

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**DOCKETS UE-220066, UG-220067, UG-210918 (consolidated)**
In the Matter of the Petition of **PUGET SOUND ENERGY** **For an Order Authorizing Deferred Accounting Treatment for Puget Sound Energy's Share of Costs Associated with the Tacoma LNG Facility**	

EXHIBIT TO TESTIMONY OF

MOLLY A. BREWER

STAFF OF WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

PSE Response to UTC Staff Data Request No. 73

July 28, 2022

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Dockets UE-220066 & UG-220067
Puget Sound Energy
2022 General Rate Case

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

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WUTC STAFF DATA REQUEST NO. 073:
REQUESTED BY: Molly Brewer

Re: Capital Planning

Please identify every internal policy PSE has related to the transmission and distribution system investment planning functions within the Operations business unit referenced in Catherine Koch's testimony (Exh. CAK-1T) by including a list of all policy numbers and titles. Please provide a copy of any document/policy/procedure that specifically identifies planning practices that relate to ensuring that all customers are benefiting from the transition to clean energy as defined in RCW 19.405.040(8) in procedure requirements. Provide in original format, preferably in Word or a text-searchable PDF. If PSE doesn't have these, please provide a detailed narrative description as to why not.

Response:

Puget Sound Energy ("PSE") objects to the interpretation of RCW 19.405.040(8) that appears to underlie WUTC Staff Data Request No. 073, which PSE views as overly broad and inconsistent with the language and intent of the statute. To the extent the data request seeks to impose or imply requirements on PSE pursuant to RCW 19.405.040(8) that go beyond the scope of Chapter 19.405 RCW, PSE objects.

More specifically, to the extent the data request interprets RCW 19.405.040(8) to apply beyond the transition to clean electricity set forth in Chapter 19.405 RCW, PSE objects to the interpretation. To the extent the data request interprets the statute to mandate that all company policies and procedures, including those specific to a business unit, expressly address how all customers will benefit from the transition to clean electricity, PSE objects to the interpretation. To the extent the data request fails to recognize the magnitude and length of the clean energy transformation set forth in the statute, and expects an immediate and wholesale revision of PSE's policies and procedures at this early date when rules have just recently been adopted, PSE objects.

Without waiving these objections and subject thereto, PSE responds as follows:

Chapter 19.405 RCW, which was passed less than three years ago, mandates a transition to 100 percent clean electricity that is to take place over a quarter-century, with interim requirements along the way. Rules to implement the statutory mandates were adopted only recently. Subsection (8) of RCW 19.405.040 requires that "in complying with" the transition to clean electricity, an "electric utility

must, consistent with the requirements of RCW 19.280.030[1] and 19.405.140,[2] ensure that all customers are benefiting from the transition to clean energy." Consistent with the statute PSE is taking action to ensure that all customers are benefiting from the transition to clean energy over the next twenty-three years, and this is reflected in PSE's Clean Energy Action Plan, Integrated Resource Plan, Clean Energy Implementation Plan, and performance-based metrics, to name a few.

In addition, PSE developed and adopted a Diversity, Equity & Inclusion Playbook (referred to as the "Playbook") to present the vision for diversity, equity and inclusion ("DEI") at PSE, including PSE's roadmap, focus areas, leadership's role and how PSE plans to advance its current efforts. DEI is a broader effort of PSE; it is not specific to any statutory mandate but reflects PSE's corporate commitment to equity. Customers are among the focus areas of the Playbook in which PSE strives for them to have "equitable access to clean energy and experience [PSE] in a manner that reflects our values and their communities." The purpose of the Playbook "is to articulate a shared vision and strategy roadmap to support our decentralized model for managing DEI" and to "help keep us aligned and moving in the same direction." The Playbook is attached as Attachment A to PSE's Response to WUTC Staff Data Request No. 062.

Please see Attachment A to WUTC Staff Data Request No. 073, which is an MS Excel spreadsheet that contains a list of internal documents that guide the transmission and distribution system investment planning functions within the Operations business unit referenced in Catherine Koch's testimony (Exh. CAK-1T).

Furthermore, please see Attachments B through R to PSE's Response to WUTC Staff Data Request No. 073, which relate to electric delivery system planning practices, a number of which include clean energy benefits relating to long-term and short-term public health and environmental benefits and reduction of costs and risks as well as energy security and resiliency for all customers. The analysis of equitable distribution of energy and non-energy benefits and reduction of burdens to vulnerable populations and highly impacted communities will be incorporated in procedures, where appropriate, as these practices are matured. PSE further notes that vulnerable populations and highly impacted communities are benefiting from PSE's investments regardless of whether PSE has formally developed procedures and definitions relative to the equitable distribution of benefits. Appendix A of the Fourth Exhibit to the Prefiled Direct Testimony of Catherine A. Koch, Exh.CAK-5, shows how various grid modernization programs are directly benefiting highly impacted communities, sorted by column labeled HC, and vulnerable populations, sorted by column labeled VP.

Attached as Attachment B to PSE's Response to WUTC Staff Data Request No. 073 is the PSE Energy Restoration Plan Vol 1.

[1] Addresses development of integrated resource plans and clean energy action plans.
[2] Requires a cumulative impact analysis to designate the communities highly impacted by fossil fuel pollution and climate change, to be completed by the department of health December 31, 2020, with rules to be adopted by December 31, 2021.

Attached as Attachment C to PSE's Response to WUTC Staff Data Request No. 073 is the Transmission System Planning Performance Requirements.

Attached as Attachment D to PSE's Response to WUTC Staff Data Request No. 073 is the WECC Regional Criteria.

Attached as Attachment E to PSE's Response to WUTC Staff Data Request No. 073 is the iDOT Information Guide.

Attached as Attachment F to PSE's Response to WUTC Staff Data Request No. 073 is the Wildfire Mitigation and Response Plan.

Attached as Attachment G to PSE's Response to WUTC Staff Data Request No. 073 is the Service Quality Program scorecard that highlights the performance objectives that PSE must comply with.

Attached as Attachment H to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Distribution Planning Guidelines.

Attached as Attachment I to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Transmission Planning Guidelines.

Attached as Attachment J to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Substation Work Practice Standards.

Attached as Attachment K to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Line Work Practice Standards Serviceman Version.

Attached as Attachment L to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Distribution Trench/Duct/Vault Construction Standards.

Attached as Attachment M to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Design Standards.

Attached as Attachment N to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Distribution Line Construction Standards.

Attached as Attachment O to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Transmission Line Construction Standards.

Attached as Attachment P to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Line Work Practice Standards Contractor Version.

Attached as Attachment Q to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Meter Work Practice Standards.

Attached as Attachment R to PSE's Response to WUTC Staff Data Request No. 073 is the Electric Relay Work Practice Standards

Investment Decision Optimization Tool (iDOT)

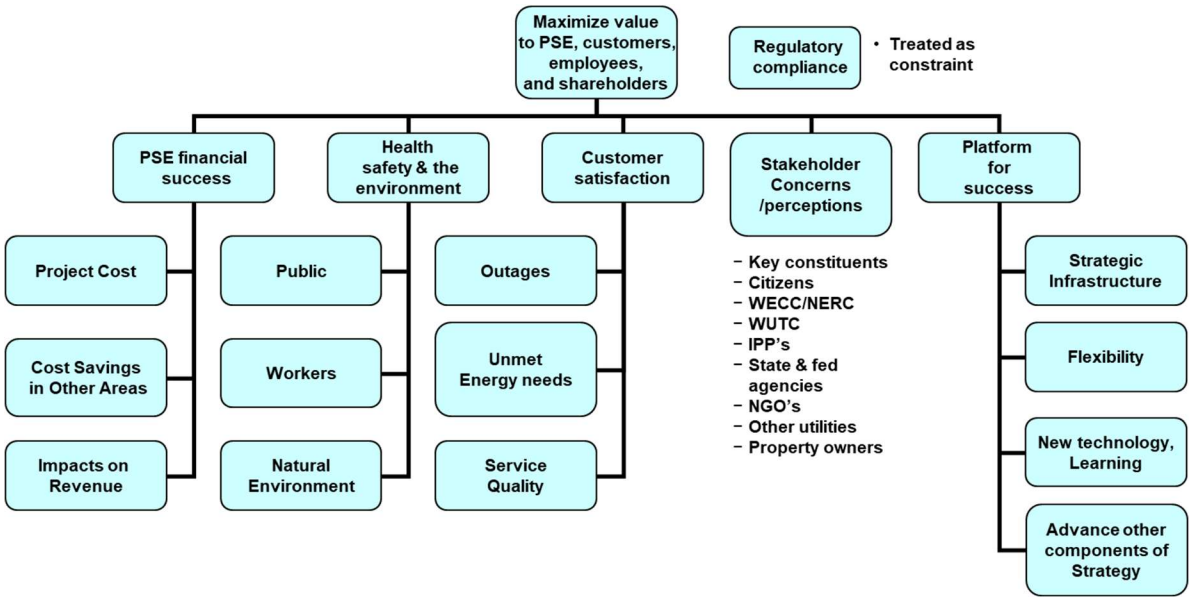
Contents

About iDOT

Investment Decision Optimization Tool ("iDOT") is System Planning's terminology for any optimization tool.

iDOT is a project portfolio optimization and multi-variable attribute value-based decision analysis tool. iDOT compares the relative costs and benefits of various project solutions and makes it easier to conduct side-by-side comparison of projects and programs of different types that will be in service for 10 to 55 years. The tool optimizes benefits and costs for a given financial portfolio and selects the best set of feasible projects against a set of constraints and dependencies.

The benefit value of a project or program is measured by up to 13 benefits divided into 5 categories. As a planner is scoping a project solution, they determine which benefits apply to the solution and score the benefits accordingly. Within the tool, there are guidance documents and separate tools that enable the planner to calculate the correct inputs. These tools also ensure consistency with the benefit inputs of similar projects. The planner inputs the benefit data of their preferred alternative(s) and the do nothing alternative into iDOT. The benefit value of the project is determined by comparing the preferred alternative(s) to the do nothing alternative. The below figure it the current iDOT benefit hierarchy for both electric and gas projects.



For each project, iDOT calculates the annual benefit value by comparing the benefits of the preferred solution and do nothing. While some benefits are financially quantified, some are qualitative or not financially quantifiable. To compare total benefits to total financial costs, all benefits must be financially represented. Benefits are translated to financial values by determining the ratio of each benefit weight to the financial benefit and then multiplying by $1 million to get relative value in financial terms. The total project benefit is the summation of the projects benefits calculated in net present value terms. The final project benefit value is adjusted by project cost, schedule, or benefit realization risk. The iDOT optimization logic maximizes the risk-adjusted net present value of the benefits to net present value of

the projects costs within applied financial constraints. The total net present value benefit divided by the net present value of the project costs is the benefit to costs ratio ("B/C").

The optimization results are reviewed by the team and management and the best portfolio is identified after considering any other factors such as resource constraints, construction and regulatory considerations. The approved list of projects is sent to the Operations PMO.

Each benefit weight is established by PSE leadership and reviewed periodically. The following sections describe each input into iDOT: the global data, the benefits, benefit weights, benefit calculations, and data sources.

Global Data

Budget

Enter $ to optimize based on instructions from Management.

If not optimizing across all 5 years, set CAP & OMRC to 'default values'(9999999999).

		2015	2016	2017	2018	2019
Capital	k$	416359.315	5000000	5000000	5000000	5000000
OMRC	k$	9800.066	100000	100000	100000	100000
O&M	k$	0	0	0	0	0

Add a comment indicating source of budget constraints

Rates

- Discount Rate per Financial Accounting: 7.06%
- Inflation Rate: currently no impact to costs, assumes inflation is included in financial inputs

Customer Weights

- Form 10-K, Revenue per Customer, go to Pugetenergy.com > SEC filings for latest Form 10-K

Customer Type	2021 Revenue per Customer	Adj. Relative Weight (Customer Weight in iDOT)
Residential Electric	$1,141	1
Commercial Electric	$6,049	5.30
Industrial Electric	$30,881	27.10
Residential Gas	$837	1
Commercial Gas	$4,126	4.90
Industrial Gas	$7,703	9.20

Risk Tolerance

- Review with Planning director annually to determine if current $ is still applicable: $10M
- If changed, add a comment

Weights

- Review with System Planning director annually to determine if weights are still applicable. May require another weighting exercise

Description	Benchmark	Benefit Weight	Normalized Weight
Revenue Increase	$1M	5.1	1.0
Capital Cost Avoided	$1M	5.7	1.1176
Maintenance Cost Avoided	$1M	6.5	1.2745
Public Risk	100 people facing 10-3 risks (1 fatality per 10 years)	9.3	1.8235
Worker Risk	100 workers facing 10-3 risks (1 fatality per 10 years)	8.9	1.7451
Environmental Impact	Localized, moderate threat to a sensitive environment.	4.6	0.9020
Outage Concern (Electric)	Four 2-hour outages for 10,000 residential customers	8.1	1.5882
Outage Concern (Gas)	Four 8-hour outages for 10,000 residential customers	12.4	2.4314
EUE Avoided (Electric)	100,000 kWh for commercial clients	8.3	1.6275
EUE Avoided (Gas)	100,000 therms for commercial clients	0	-
Quality Improvement (Electric)	1 year major concern to 1,000 residential customers	6.8	1.3333
Quality Improvement (Gas)	1 year major concern to 1,000 residential customers	0	-
Stakeholder Perception	Severe criticism from key constituents, threat of lawsuit from citizens	7.4	1.4510
Infrastructure	$1M in strategic infrastructure	5.3	1.0392
Learning	$1M in learning R&D	1.4	0.2745
Flexibility	Significant increase in flexibility	5.7	1.1176
Contribution To Strategy	Significant contribution to strategy	4.5	0.8824

Benefits and Descriptions

Timeline

Establishes the year benefits should begin accruing, how long some of the benefits are earned, and the costs to dispose of the asset at the end of it's life.

Year in service

Year asset is in place and benefits begin to accrue.

This should be the year when the last capital cost is incurred. For example, if your project will be constructed and completed all in the current budget year of 2023 then you should enter 2023. Note that it is required that this year precede (or be equal to) the first year revenue increase begins to accrue.

Inputs	Data Entry
Year In Service	Year last capital costs are incurred

Asset Life

Number of years the asset will be in place and benefits are accrued.

The appropriate asset lifetime for your project is crucial in ensuring that the total benefit for your project is calculated for the entire asset lifetime. If you are installing assets with varying lifetimes enter the smallest of the different asset lifetimes to ensure the benefits for are estimated for the most conservative lifetime of your project.

Inputs	Data Entry
Asset Life	Number of year asset will be in place

Data source:

All groups: Plant Accounting Asset Life table

Salvage Value

Enter the end-of-life salvage value in nominal dollars this value may be negative if disposing of the asset results in a net cost.

Salvage value should be scored for all projects that install assets. The intention of this score is to capture the salvage value of the asset you are installing for this project. If your project involves a replacement you do not need to input the salvage value of the asset that already exists that you are replacing.

Inputs	Data Entry
Salvage Value	Capital costs to dispose of asset

Data source:

All groups: Plant Accounting Salvage Value table

Costs

Select up to 10 WBS elements and up to 20 years of capital and OMRC costs.

Input	Data Entry
WBS Element	Select from drop down
Capital Expenditures	Year by Year capital costs
OMRC Costs	Year by Year OMRC costs

Calculation of Projects Costs:

Current Year Capital & OMRC costs + (NPV of future year capital & OMRC costs [includes salvage value])

Data sources:

Strategic System Planning

- New Project: Project Controls cost estimating tool
- Program: provided by Budget Group, from 5 year plan

Regional System Planning

- New Project: Cost Estimating spreadsheet.
- Program: provided by Budget Group, from 5 year plan

Electric Asset Management

- Program: provided by Budget Group, from 5 year plan

GSI System Planning

- New Project: Project Controls cost estimating tool
- Program: provided by Budget Group, from 5 year plan

GSI Maintenance Planning

- Program: provided by Budget Group, from 5 year plan

Revenue Increase Benefit

Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
What is a revenue shortfall of $1M worth to you? ~140 electric commercial customers OR ~177 gas commercial firm customers	$1M gain	1,000,000	5.1	1.0

iDOT Benefit Description

Enter the first year that of non-zero revenue and year that maximum revenue is reached. For electric projects, this information comes from the Unserved Energy Spreadsheet.

Input	Data Entry
Revenue Increase: First Year	Year
Revenue Increase: Other Parameters	
First Year	In k$
Maximum Revenue Increase	In k$
Year maximum revenue reached	Year
Likelihood of Revenue Increase	In %

Benefit Calculation

1) Annual value, begins year project is placed in service through asset life
   - If Maximum Revenue Year has not been met: Previous Year Revenue * average revenue growth rate
   - If Maximum Revenue Year has been met: Previous Year Revenue
2) Total Value Breakdown:
   - (Current Year Revenue+ NPV of future years Revenue) * Likelihood of Increase *Normalized Weight

Data sources:

Regional System Planning: EUE Spreadsheet
Other groups: N/A

Cost Avoidance Benefit

	Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Capital Cost Avoided	What is an increase of future capital expenditure of $1M worth to you?	$1M	1,000,000	5.7	1.1176
Maintenance Cost Avoided	What is an increase of future O&M expenditure of $1M worth to you?	$1M	1,000,000	6.5	1.2745

iDOT Benefit Description

Enter the capital & OMRC cost savings if your project is funded and the cost savings occur in specific years, vary from year to year, or on-going over the life of the asset. Enter avoided costs as positive values. If costs are expected to be incurred rather than avoided, enter negative values. Note: the specific year costs savings are in addition to the on-going cost savings.

Input	Data Entry
CapEx Avoided	Enter 15 yrs of capital costs savings as single year inputs, in k$
CapEx Avoided, On-Going	In k$, life of asset
O&M Avoided	Enter 15 yrs of savings as single year inputs, in k$
O&M Avoided, On-Going	In k$, life of asset
Likelihood of Cost Avoidance	
Probability that the assessed cost avoidance will actually occur	
CapEx Avoidance	In %
O&M Avoidance	in %

Benefit Calculation

1) Total Value Breakdown:
   - (Current Year Avoided Costs + NPV of future year avoided costs) * Probability of Cost Avoidance * Normalized Weight

Health & Safety Benefit

	Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Public Risk	Addressing a public hazard that has a chance of causing severe pain and anguish to the public. Planners are resolving potential explosions, fires, structural failures; they indicate the number of people exposed, the chance of the risk occurring and how much risk will be reduced if the project is built. Unsafe conditions that are an imminent threat to the public are funded immediately, without utilizing iDOT	100 people facing 10-3 risks (1 fatality/10 yrs)	0.1	9.3	1.8235
Worker Risk	Addressing a worker hazard that has a chance of causing severe pain and anguish to a worker. Planners are resolving potential explosions, fires, structural failures; they indicate the number of people exposed, the chance of the risk occurring and how much risk will be reduced if the project is built.Unsafe conditions that are an imminent threat to workers are funded immediately, without utilizing iDOT	100 workers facing 10-3 risks (1 fatality/10 yrs)	0.1	8.9	1.7451

iDOT Benefit Description

Assess the impact of this project on public and worker health & safety. Define a risk scenario (no direct impact on the calculation), an annual frequency of occurrence of the risk at hand, the number of people potentially exposed to this risk, the severity of consequence for this event, and the likelihood that the effect will actually take place. Then, for each version of this project, define how effective it is at reducing part or all of this risk (in percentage points). Refer to the general guidelines for typical projects

The benefit value is over the life of the asset.

Inputs	Internal Weight (if applicable)	Data Entry
Risk Scenario • None, Fire or Explosion, Electric Shock, Outage, Gas Leak, Vehicle Collision, Human Intrusion, Tripping and Slipping, Structural Failure, Other	n/a	Select from the list
Annual Frequency of Occurrence	n/a	Number of People
Number of People Potentially Exposed per Occurrence	n/a	Number

Severity of Consequence • No effect • Minor effect. Exposures are unlikely to produce more than minor injury and/or temporary discomfort (e.g., cuts, bruises, minor burns). • Moderate effect. Exposures may produce moderate injury or illness, but the effects are not likely to be long-term (effects last 1 year or less) or life-threatening (e.g., broken bones, torn ligaments, moderate burns, temporary disability). • Serious effect. Exposures may produce permanent debilitating injury or serious long-term illness (effects last 5 years or more) (e.g., permanent loss of function of hand, leg, eye, third-degree burns). • Very serious effect. Exposures may produce death or are likely to produce permanent and near-total loss of quality of life (e.g., death, coma, quadriplegia).	0 0.0001 0.1 0.1 1	Select one of the effects
Likelihood of Effect	n/a	In %
Risk Reduction Effectiveness: Percentage of the baseline risk that this project reduces. Negative numbers are permitted to indicate that the risk increases. The risk reduction applies through the lifetime of the asset (for capital projects), or for the 5 years under consideration (for maintenance projects).	n/a	In %

Benefit Calculation

1) Annual value over life of asset:
   - ((Number of People Exposed * Severity of Consequence Weight * Likelihood of Effect * Risk Reduction Effectiveness))/Benchmark Unit * Normalized Weight *$1,000,000
2) Total Value Breakdown
   - Current Year H&S + NPV of future years H&S

Environment Impact Benefit

Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Addressing a potential environmental risk due to oil spills, mercaptan leaks, avian fatalities, etc. Planners note the type of impact if not the issue is not addressed, and the scope and seriousness of such a threat.	Localized, serious threat to a sensitive environment	0.3	4.6	0.9020

iDOT Benefit Description

List all the environment resources relevant for this project (and, for capital projects, for the Do Nothing option). Typical projects scored in this benefit are oil leaks, mercaptan leaks, or any projects affecting fish and wildlife (e.g. animal guards). Scores will be project dependent.

The benefit value occurs in a single year.

Inputs	Internal Weight	Data Entry
Environmental Resources		Select from one to five potentially affected resources
• None	0	
• Aesthetic impact (visual, sound, odor)	0.001	
• Land use (agriculture, commercial, residential, recreational, open spaces)	0.0025	
• Sites or areas of prehistoric historic or cultural significance;	0.025	
• Ground water resource surface water or wetland	0.1	
• Population or habitat of sensitive species which are under review and/or pertaining to unique species	0.3	
• Population or habitat of federal- or state-designated endangered or threatened species (or candidate thereto)	1	
Environment Resources Affected: Do Nothing Of the resources selected, check those that are affected if this project is not funded.	n/a	Check affected resources
Environment Threat: Do Nothing Assess the scope and seriousness of the threat to the environment resources if this project is not funded		Select Scope and Seriousness of threat
Scope of threat		
• No impact	0	
• Limited, localized impact	1	
• Large-scale or wide-area impact	5	
Seriousness of threat		
• No threat	0	
• Very low threat. The nature of the hazard and potential	-0.1	

environmental pathways is such there is no credible scenario by which toxic chemicals or other hazards could impact sensitive environmental resources at sufficient levels to cause damage. *At worse, environmental exposures would produce a minor and temporary impact on the environment that would cause no measurable damage. Large-scale or wide-area impact*		
a. Low threat. The nature of the hazard and potential environmental pathways is such that there may be a credible scenario by which toxic chemicals or other hazards could impact sensitive environmental resources. However, the likelihood of such scenarios occurring is estimated to be very low. At worst, environmental exposures would produce a minor and temporary impact on the environment that would self-correct within a year.	-0.4	
b. Moderate threat. The nature of the hazard and potential environmental pathways is such credible scenarios would result in levels of impact that may affect the local abundance of a sensitive species, or damage valued (but not unique) historical properties. At worst, environmental exposures would produce a temporary impact on the environment that would be largely self-correcting within about 10 years.	-1	
c. High threat. The nature of the hazard and potential environmental pathways is such credible scenarios would produce widespread and severe damage to sensitive species, or destruction of unique historical properties. Observations indicate that the environmental quality is rapidly decreasing with time. Action to prevent spread of contaminants in toxic concentrations or similar hazards will probably be needed in less than 5 years. Environmental exposures would produce permanent damage to the environment.	-10	
Environment Resources Affected: With Project Of the resources selected above, check those that are affected if this project is to be funded.	n/a	Check affected resources
Environment Threat: With Project Assess the scope and seriousness of the threat to the environment resources if this project is to be funded. Same as selection as the without project.		Select Scope and threat

Benefit Calculation

1) Total Value Breakdown. One Time Effect. If calculation is negative, effective immediately. If calculation is positive, occurs in Year in Service
   a) (Sum of weights for selected environmental resources * ((Sum of Do Nothing Scope of threat weight * Do Nothing Seriousness of threat weight for selected resources) – (Sum of With Project Scope of threat weight * With Project Seriousness of threat weight for selected resources))/Benchmark Unit Weight) * Normalized Weight * $1,000,000

Data Sources

All Groups: Avian Protection, self-knowledge,

Customer Scope

iDOT Benefit Description

For each customer type, enter the **initial number of customers** impacted by this project, the **growth rate** past the first year at which the number of each customer type grows, and the expected number of **years** this assessed growth occurs. The starting point of the number impacted (Initial Customers) refers to the year the asset is in place for capital projects, or to the budget year for maintenance projects. Refer to the Major Account list for clarification on which customers should be considered Major Accounts.

The different customer types are weighted differently for electric and gas and are based on the estimated revenue/customer (Residential customers have the lowest weight and Major Account customers have the highest weight). When iDOT determines your scores for Outages and Energy and Service Quality these weights are multiplied by the number of customers you enter below based on the type of customer. The number of customers is then grown out for the number of years you have indicated for the growth rate you have indicated below. After the number of growth years has been reached or if your growth years are zero the total number of customers impacted by your project are then added up each year for the total asset life of your project. The number of customers does not impact your EUE score

Customer Weights per annual Form 10-K, average revenue billed per Customer and is updated annually.

	Inputs	Internal Weight	Data Entry
Electric	Residential	1	Initial count, growth rate and maximum number of growth rate years
	Commercial	5.9	
	Industrial	28.4	
	Major Account	50	
Gas	Residential	1	
	Commercial	5	
	Industrial	8.7	
	Major Account	50	

Benefit Calculation

1) Annual value, over life of asset and begins the year project is in service. For each customer type:
   a) If maximum number of growth years hasn't been met: previous years count * annual growth rate
   b) If maximum number of growth years has been met or growth years is zero: annual customer count is same as previous year
2) Converts counts to an annual Residential Customer Equivalent (RCE)
   a) (# of residential customers * Residential weight) + (# of Commercial Customers * Commercial Weight) + (# of Industrial Customers * Industrial Weight) * (# of Major Account Customers * Major Account Weight)

Data sources:

Number of Customers

Strategic System Planning: Customer Database (data from GIS)
Regional System Planning

- Circuit Level and below -- Trace tool in Tensing
- Circuit Level and up – Customer Database (data from GIS)

Electric Asset Management: ???
Gas System Planning: Gas outage spreadsheet
GSI Maintenance Planning: not entered

Growth Rate and Growth Years

All Groups: Load Forecast

Outages Concern Benefit

	Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Electric	Addressing the potential for future outages. Planners input 5 year forecast of outage frequency and duration with and without the project	Four, 2-hr outage for 10,000 residential cust	80,000	8.1	1.5882
Gas	Addressing the potential for future outages. Planners input 5 year forecast of outage frequency and duration with and without the project	Four, 8-hr outage for 10,000 residential cust	320,000	12.4	2.4314

iDOT Benefit Description

Enter the number of outages per impacted customer, year by year, and the average duration per outage. Assume that the value entered for the last year in this table applies to the remainder of the life of the project (if applicable). Year 1 corresponds to the 1st year the asset is in place.

The benefit value for outages for your project is based on the following calculation:
(Total Number of Customers)*(Number of Outages)*(Duration of Outages)

The benefit value applies to a maximum of 15 years.

Utilize the attached spreadsheets to determine gas and electric outages

Inputs	Data Entry
Outages: Do Nothing	
d. Number of Outages per year	Enter 5 years
e. Average Outage Duration (in min)	Enter 5 years
Outages: With Project	
f. Number of Outages per year	Enter 5 years
g. Average Outage Duration (in min)	Enter 5 years

Benefit Calculation

1) Annual value for 15 years and begins the year project is in service. Last year of entered outages applies to years 6 through 15.
   a. (Benefit Weight * $1,000,000) * (((Number of Do Nothing outages * Do Nothing outage duration)/60 – (Number of With Project outages * With Project outage duration)/60) * RCE))/Benchmark Unit)
2) Total Value Breakdown
   a. Current Year Outages + NPV of future years Outages

Data sources:

Strategic System Planning
for some projects, based on probability of failure. Other utilize the transmission reliability index

Regional System Planning

- Specific projects: Predictive Spreadsheet. Planner downloads the 5 year history of outages on the circuit from SAP and selects outages that would have been prevented by proposed project and outages outside the project area where customers in the project area would still be affected even with the proposed project. The predictive spreadsheet calculates the average annual number of outages and outage duration without and with the project.
- Program: For each program, the supervisor estimates the number of projects the funding will support and has assumptions of the number of outages those projects will eliminate, average outage duration and number of customers affected. The assumptions are detailed in the Outage comment section in iDOT for each program

Electric Asset Management

- CRP and Pole Replacement Program: Previous year's actual cable and pole outage history per SAP.
- Transmission breaker replacement, oil filled breaker, distribution substation transformer replacements, and circuit switchers programs: Estimated failure rate from aging infrastructure failure probability tool

Gas System Planning

- Gas Outage Spreadsheet: Requires source flow, base case outage flow, solution outage flow, existing system capacity, new system capacity, O&M relight cost, area growth rate, % area load, new asset life

Expected Unserved Energy (EUE) Benefit

	Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Electric EUE Avoided	Addressing the need to have sufficient capacity to serve the increasing energy needs of customers. Planners input 15 years of expected unserved energy based on current capacity, known spot load and growth forecast both with and without the project.	100,000 kWH for commercial clients	100,000	8.3	1.6275
Gas EUE Avoided	N/A: Gas Planning does not plan for unserved capacity. Their planning focus is to prevent outages.	N/A	N/A	N/A	N/A

iDOT Benefit Description

The benefit value for the EUE score for your project is based on the total EUE for the lifetime of the asset you are installing. This is determined by taking the last year of EUE that you input and multiplying that EUE by the EUE growth rate for each year until the end of the asset life (as indicated in the Asset Lifetime Section). The EUE for all the years up to the asset life are then added together to get a total EUE for your project

Inputs	Data Entry
EUE: Do Nothing	Enter 15 years
EUE: With Project	Enter 15 years
EUE Growth Rate: Do Nothing	
h. Growth rate of EUE if the project is not funded, past the last input made above.	in %
EUE Growth Rate: With Project	
i. Growth rate of EUE with the project being funded, past the last input made above and through the remainder of the life of the project, if applicable.	in %
EUE Avoided: Maximum	
j. Maximum admissible EUE reduction (in kWh) attributable to project (i.e., reduction at capacity). This is equal to the EUE that occurs the same year that the max revenue increase occurs from AIM.	Number

Benefit Calculation

1) Annual value for life of project. Years 1 -15 are entered values. Year 16 through end of asset life: Previous year EUE * growth rate
   a. If difference between EUE Do Nothing and EUE with project is not greater than Maximum EUE
      i. Normalized Weight * ($1,000,000/Benchmark Unit) * (EUE Do Nothing – EUE With project)
   b. If difference between EUE Do Nothing and EUE with project is greater than Maximum EUE
      i. Normalized Weight * ($1,000,000/Benchmark Unit) * (Maximum EUE)

2) Total Value Breakdown
    a. Current Year EUE + NPV of future years EUE

Data sources

Regional System Planning:

- EUE Spreadsheet calculates kWh that PSE will be able to serve with the load addition (e.g., new substation, new feeder, 3ph upgrade, regulators). For each study area, planners need: load forecast, existing system peak, system capacity, 8760 load profile, investment plan (cost of the improvement and how much capacity it will provide), breakdown of customer type

Other groups: Not applicable

Energy Quality Benefit

	Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Electric Quality Improvement	Resolving customer complaints concerning reliability or power quality. The project area must have recorded UTC, executive or first response complaints. The planner indicates if the project will resolve the reliability or power quality issues.	1yr major concern to 1,000 residential cust	1,000	6.8	1.3333
Gas Quality Improvement	N/A: Customers do not complain about gas outages	N/A	N/A	N/A	N/A

iDOT Benefit Description

Energy Quality should be scored if there are actual complaints and/or Energy or service quality events or problems including voltage flicker, harmonics or momentary outages. The impact is multiplied by the number of customers affected by the project which were input in the Customer Scope section. Enter the service and/or power quality score each year. For capital projects, the score entered the fifth year applies for the next 10 years or for the remainder of the life of the asset, if the asset life is less than 15 years.

The benefit value applies to a maximum of 15 years.

Inputs	Internal Weight	Data Entry
Energy Quality: Do Nothing		Enter expected value for 5 years based on descriptions
• No Concern	**0**	
• Minor concern: ○ The service or power quality issue was reported by a customer to First Response or TESP, ○ Or the power quality problem (e.g., voltage flicker, sag, harmonics, outage frequency, momentary outages etc.) addressed by the project is of minor concern to impacted customers: ○ When it occurs, the power quality problem creates no damage to customer equipment or no significant economic loss to the customer ○ The problems occur infrequently (e.g. only during one month of the year) and are of short duration.	**-0.01**	
• Moderate Concern ○ The service or power quality issue was: ▪ reported by two customers to First Response or TESP	**-0.1**	

▪ or reported directly to PSE executives ○ Or the power quality problem addressed by the project is of moderate concern to impacted customers: ▪ When it occurs, the power quality problem may cause damage to customer equipment or produce moderate economic loss to the customer, ▪ Or the problem occurs frequently to significantly damage customer satisfaction with PSE service.		
• Major Concern ○ The service or power quality issue was: ▪ reported by three or more customers to First Response or TESP, ▪ or reported directly to PSE executives in multiple complaints, ▪ or reported to the WUTC. ○ Or the power quality problem addressed by the project is of major concern to impacted customers: ▪ When it occurs, the power quality problem likely causes significant damage to customer equipment or produces major economic loss to the customer. ▪ The problem occurs very frequently to more significantly damage customer satisfaction with PSE service	**-1**	
Energy Quality: With Project		Enter expected value for 5 years based on descriptions
Energy quality with the project being funded. (See above for descriptions.)	**Same as above**	

Benefit Calculation

1) Annual value and begins in year project is in service. Years 1 – 5 are based on entered data. Year 6 – 15 are the same as Year 5.
   a. (Normalized Weight/Benchmark Unit * $1,000,000) *((EQ Do Nothing Weight - EQ With Project Weight) * RCE)
2) Total Value Breakdown
   a. Current Year EQ + NPV of future years EQ

Data sources:

Regional System Planning: Planners compile 5 year history of complaints in the project area.

- Circuit Reliability Comments report in BW. All SM notifications pertaining to power quality or reliability that either require EFR follow-up or not (customer did not want to be contacted). Searchable by circuit.
- Servicemen or EFR engineers may also provide power quality issues

Other groups: Not applicable

Stakeholders Benefit

Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Addressing a potential issue that, if not resolved, will result in PSE being severely criticized by stakeholders such as UTC, WECC/NERC, cities and jurisdictions. Planners indicate what the perception will be among the selected stakeholders with and without project.	Severe criticism from key constituents, threat of lawsuit from citizens	2	7.4	1.4510

iDOT Benefit Description

Stakeholders Impacted should be scored if there is a perception that complaints from Stakeholders will occur if the project is not built. Stakeholder perception scores are NOT multiplied by the number of customers affected by the project which were input in the Customer Scope section.

Refer to the stakeholder definitions.

The benefit value occurs in a single year.

Inputs	Internal Weight	Data Entry
Stakeholder Type		Select from one to eight affected stakeholders
• None	0	
• Citizens: Since all projects impact citizens this should be used only in instances where there is an organized group of citizens. Above and beyond the normal.	1	
• Property Owners: Since all projects impact property owners this should be used only in instances where there is an organized group of property owners such as an active homeowners association or a NIMBY group	1	
• Media: The project addresses concerns that had previously been reported in any media outlet or probably would be reported if we didn't address the problem. Examples include projects of similar nature to the Spiritridge or issues in Downtown Olympia.	1	
• WECC/NERC: Project is a result of the WECC/NERC requirements	2	
• WUTC: Any project where the UTC is a major player. Examples include the Bare Steel Program or project addresses customer complaints to the UTC.	2	
• IPPs: Independent Power Producers	1	
• State and Federal Agencies: Must be a different agency than the UTC. If project impacts multiple agencies, each agency must express different concerns.	2	
• NGOs: Non-governmental organization	1	
• Other Utilities: Other utilities can include telephone, cable, or other	1	

gas and electric utilities.		
• Cities: Project potentially impacts PSE's working relationship with any city. Examples include taking advantage of a public improvement project or there is a potential loss of customers to municipalization.	2	
• Other Key Constituents: Project potentially impacts PSE's working relationship with any Major Account or Business Account (customers must be on either the Major Account or Business Account list – list provided in iDOT	1	
Stakeholder Perception: Do Nothing		Select appropriate perception for each affected stakeholder
Select the score that, on balance, best describes the anticipated reaction of the identified stakeholders without the project being funded.		
• Improved relationships, praise	0.1	
• No observable response, one way or the other.	0	
• Undocumented complaints and criticisms.	-0.1	
• Documented criticism and complaints, letters to UTC, degradation of relationships.	-0.3	
• Severe criticism, legal responses, including threats of lawsuits and nominal monetary fines. Loss of trust. Project decision will be the subject of at least one, adverse, local news story.	-1	
• Significant monetary fines likely, highly negative national news stories, lawsuits will definitely be filed. Project decision will be the subject of multiple local news stories.	-3	
• Significant monetary fines and charges of criminal conduct will result. Public demonstrations will occur. Lawsuits will definitely be filed and a complete breakdown in working relationships will result. Project decision will be the subject of at least one national news story.	-10	
Stakeholder Perception: With Project		Select appropriate perception for each affected stakeholder
Select the score that, on balance, best describes the anticipated reaction of the identified stakeholders with the project being funded. See above list		
Stakeholder Reactions: Probability		
Enter the likelihood (between 0% and 100%) that the indicated response occurs		In %

Benefit Calculation

1) One Time Effect
   a) (Sum of (selected Stakeholder weight * (Stakeholder Perception: Do Nothing weight - Stakeholder Perception: With project weight))/Benchmark Unit) * Normalized Weight * $1,000,000

Data sources

All groups: Selected based on planner's knowledge of project area. The list of Major Accounts and Business Accounts are provided (updated annually).

Platform for Success

Flexibility

Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Trying to prevent a lost an opportunity to "significantly" improve PSE flexibility to utilize the system. Examples include projects that creating looped HP/IP systems, new limit station, new transmission stations or distribution substation, or feeder ties, etc. Planners indicate on a scale of -10 to 10 if the project improves system flexibility	Significant increase in flexibility	10	5.7	1.1176

iDOT Benefit Description

Score how this project impacts our flexibility. Please refer to platform for success for general guidelines.

The benefit value occurs in a single year.

Inputs	Data Entry
Enter a value between -10 and 10.	Enter a number between -10 and 10

Benefit Calculation

- One Time Effect
  a) (Entered Flexibility Value/Benchmark Unit) * Normalized Weight * $1,000,000

Data sources

- All Groups: Scored based on a guidance document that is reviewed annually.

Contribution To Strategy

Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Trying to prevent a lost opportunity to make "significant improvements" to elements of its corporate strategy? Examples include regionally significant transmission projects, HP that supports generation. Planners indicate on a scale of -10 to 10 if the project improves system flexibility	Significant contribution to strategy	10	4.5	0.8824

iDOT Benefit Description

Score how this project impacts other components of our corporate strategy. Please refer to platform for success for general guidelines.

The benefit value occurs in a single year.

Inputs	Data Entry
Enter a value between -10 and 10	Enter a number between -10 and 10

Benefit Calculation

1) One Time Effect, year project is placed in service
   a) (Entered Contribution To Strategy Value/Benchmark Unit) * Normalized Weight * $1,000,000

Data sources

- All Groups: Scored based on a guidance document that is reviewed annually.

Strategic Infrastructure

Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Trying to prevent a lost opportunity to have strategically important infrastructure costing $1M. Strategic infrastructure includes areas with the threat of municipalization, right of way purchases for future facilities, Suncadia type projects, NERC driven projects. Planner indicate the % of project costs that are dedicated to creating new strategic infrastructure	$1M in strategic infrastructure	1,000,000	5.3	1.0392

iDOT Benefit Description

Determine the fraction of the project costs that are dedicated to creating strategic infrastructure

The benefit value is applied to the same years costs are entered in the project cost section

Inputs	Data Entry
Enter the fraction of the project costs	In %

Benefit Calculation

1) For each year of capital expenditures
   a) % of costs* Annual Project Costs * Normalized Weight *1000
2) Total Value Breakdown
   a) Current Year Strategic Infrastructure + NPV of future years Strategic Infrastructure

Data sources

All groups: Manager of Local and State Government Affairs provides list of jurisdictions that have active efforts to municipalize

Learning

Description	Benchmark	Benchmark Unit	Benefit Weight	Normalized Weight
Trying to prevent a lost out on an opportunity to create a learning experience worth $1M. Examples of learning opportunites are the CBD fault indicators project in Bellevue or a fuel cell project. Planner indicate the % of project costs that are dedicated to creating new strategic infrastructure. Used minimally but available when needed.	$1M in learning R&D	1,000,000	1.4	.2745

iDOT Benefit Description

Determine the fraction of the project costs that are dedicated to new knowledge

The benefit value is applied to the same years costs are entered in the project cost section

Inputs	Data Entry
Enter the fraction of the project costs that are dedicated to new knowledge	In %

Benefit Calculation

1) For each year of project costs
   a) % of costs* Annual Project Costs * Normalized Weight
2) Total Value Breakdown
   a) Current Year Learning + NPV of future years Learning

Data sources

- All groups: Manager of Local and State Government Affairs provides list of jurisdictions that have active efforts to municipalize

Risk Benefit

Intrinsic Project Risk

Enter the cost risk score for this project. This risk is based upon how confident you are in the accuracy of the costs you have given for this project. You may enter a decimal score.

Inputs	Internal Weight	Data Entry
Project has above average cost risks. At least one of the following is true: • The resources required to successfully complete the project are uncertain. Actual costs could easily vary by 40% from the estimates. • The time required to complete the project is uncertain—actual project duration could vary by 40% from the estimates	1	-1
Project has average cost risks. At least one of the following is true: • The resources required to successfully complete the project are uncertain. Actual costs could vary by 20% from the estimates. • The time required to complete the project is uncertain—actual project duration could vary by 20% from the estimates.	0.4	0
Project has low or below average cost risks. All of the following are true: • Experience or well-established models are used to support all cost-related project scores • The resources required to successfully complete the project are relatively certain--actual costs will be within 10% of the estimates. • The time required to complete the project is relatively certain—actual project duration will be within 10% of the estimates.	0.1	1
Project has very little cost risk. All of the following are true: • All cost-related project inputs are based on empirical data or well-established experience. • The resources required to successfully complete the project are highly predictable. Actual costs will be within 5% of the estimates. • The time required to complete the project is highly predictable. Actual project duration will be within 5% of the estimates.	0	2

Benefit Calculation

1) Negative Value
   a) ((Present Value of Project Costs))* Weight of selected risk)) ^{2} / (2 * Normalized Weight * 1000000)

Intrinsic Project Benefit Risk

Enter the benefit risk score for this project. This risk is based upon how confident you are in the accuracy of the benefits you have given for this project. You may enter a decimal score.

Inputs	Internal Weight	Data Entry
Project has above average benefit risks. At least one of the following is true: • There is some chance (i.e., 5% or more) that the project may fail to produce its intended benefits. • Actual benefits could be +/- 40% from the estimates reflected in the scores	1	-1
Project has average benefit risks. At least one of the following is true: • Actual benefits could be +/- 20% from the estimates reflected in the scores.	0.4	0
Project has low or below average benefit risks. All of the following are true: • Experience or well-established models are used to support all benefit-related project scores • Similar projects have never failed to produce the indicated benefits • Uncertainty over project benefits is low—actual benefits will (with 95% probability) be within 10% of the estimates reflected in the scores.	0.1	1
Project has very little benefit risk. All of the following are true: • All benefit-related project inputs are based on empirical data or well-established experience • There is no chance that the project may fail to produce its intended benefits. • Uncertainty over project benefits is very low—actual benefits will (with 95% probability) be within 5% of the estimates reflected in scores.	0	2

Benefit Calculation

1) Negative Value
   a) (Sum of Total Value Breakdown for each benefit* Weight of selected risk) ^{2} / (2 * Normalized Weight * 1000000)

B/C ratio for each project

Sum of each benefit Risk Adjusted Total Value Breakdown / PV of costs

Project Dependencies

Planners can declare dependencies between projects. However, how Planning currently proposes and funds projects, this feature is not used.

Optimization Portfolio

Adding projects

The iDOT administrators add projects as planners complete iDOT input and submit the project for consideration.

Quality Assurance/Quality Control

All projects and programs that are submitted for consideration are reviewed by iDOT administrators to ensure constituency in inputs/scoring across similar project solutions, the inputs align with the scoring guidance, and supporting documentation has been uploaded to the project.

Optimization

Budget

Enter the budget constraints in Global Data

Optimization Schema

Select the schema, currently use Maximize risk-adjust NPV s.t. 5yr Capital and OMRC

Projects to Include

Select All project with Considered in review status

Mandated Statuses to Enforce

Keep all boxes checked.

Sensitivity analysis

Typically generate 10 cases based on the capital budget. This provided a view of projects “funded” if the capital budget is increased or decreased

Run the optimization

Results indicate the projects iDOT selects based on the entered budget constraints. As a reminder these results inform the decision makers, the results are not the final approved project list that is sent to the Operations PMO.