

April 21, 2021

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**VIA OVERNIGHT COURIER**

Mr. Mark L. Johnson  
Executive Director and Secretary  
Washington Utilities and Transportation Commission  
621 Woodland Square Loop SE  
Lacey, Washington 98503

**Re: 2021 Final Integrated Resource Plan Work Papers  
UE-200304 and UG-200305**

Received  
Records Management  
04/29/21 13:44  
State Of WASH.  
UTIL. AND TRANSP.  
COMMISSION

Dear Mr. Johnson:

Enclosed please find the work papers of Puget Sound Energy (“PSE”) that support PSE’s Final 2021 Integrated Resource Plan, filed in Dockets UE-200304 and UG-200305. Attached as Attachment A to this letter is a list of the work papers included.

PSE has marked files as “**CONFIDENTIAL per WAC 480-07-160.**” These files are protected from any further disclosure by the Commission or the Office of the Attorney General, including outside experts, pursuant to RCW 80.04.095 and WAC 480-07-160. PSE, its customers, and/or third parties that submitted commercially sensitive information to PSE, would be harmed by release of the confidential information contained in PSE’s filing.

If you have any questions about the information contained in this filing, please contact me at 425.635.1416.

Sincerely,



Jason Kuzma

Attachment  
Enclosures

**ATTACHMENT A**  
**2021 PSE IRP Work Papers**

**1. Aurora Folder**

**1.1. AOPFProject Folder**

- Project File.xml

**1.2. ArchiveInfo Folder**

- ArchiveInfo File.xml

**1.3. ChangeDataSets Folder**

- HR\_Final\_Mid Scenario\_012621.diff.xml
- HR\_Final\_Mid Scenario\_012621.xml
- HR\_Preferred Portfolio.diff.xml
- HR\_Preferred Portfolio.xml
- LTCE\_Preferred Portfolio.diff.xml
- LTCE\_Preferred Portfolio.xml

**1.4. ComputationalDataSetTables Folder**

- Monthly Spark Spreads by Zone.xml

**1.5. InputTables**

- Ancillary Services Table.xml
- Areas LTCE 2021 IRP.xml
- Capacity Price\_RMT\_2021 IRP\_Mid Scenario\_Final\_012521.xml
- Capacity Price\_RMT\_2021 IRP\_Preferred Portfolio.xml
- Conditions\_2021 IRP.xml
- Constraint Table Example.xml
- Constraint\_2021 IRP\_CETA.xml

- Daily Change Example.xml
- Demand Esc\_2021 IRP.xml
- Demand Hourly\_2021 IRP.xml
- Demand Monthly Peak\_2021 IRP.xml
- DmdMo PSE\_F2020\_2021 IRP.xml
- Electric Prices\_2021 IRP.xml
- Emission Rate\_2021 IRP\_Add upstream.xml
- EmPrice\_2021 IRP.xml
- Fuel\_2021 IRP.xml
- General Info\_2021 IRP.xml
- Generic Heat Rate Definitions.xml
- Heat Rate Example Table.xml
- Hubs 2021 IRP.xml
- Hydro Monthly\_2021 IRP.xml
- Hydro Vectors\_2021 IRP.xml
- Link 2021IRP\_SCC Adder.xml
- Link 2021IRP\_No SCC Adder.xml
- Maintenance Schedule LTCE 2021 IRP.xml
- New Resources\_2021 IRP\_Base.xml
- Operating Pools 092013 R111613.xml
- Portfolio Contracts\_2021 IRP\_LTCE.xml
- Portfolio Information\_LTCE 2021 IRP.xml
- Portfolio Resources\_2021 IRP\_Base.xml
- PSE Area.xml

- Resource Dependency LTCE 2021 IRP.xml
- Resource Groups 2021 IRP.xml
- Resources\_LTCE 2021 IRP\_Base.xml
- Risk Input Hydro.xml
- RMT\_ 2021 IRP\_Mid Scenario\_Final\_012521.xml
- RMT\_ 2021 IRP\_Preferred Portfolio.xml
- Storage Example.xml
- Storage\_2021 IRP.xml
- Time Series Annual\_2021 IRP\_2045.xml
- Time Series Generic\_2021 IRP\_Base.xml
- Time Series Monthly\_2021 IRP\_2045.xml
- Time Series Weekly\_2021 IRP\_LTCE.xml
- TS\_Hourly\_2021 IRP\_DSMBundle1.xml
- TS\_Hourly\_2021 IRP\_DSMBundle2.xml
- TS\_Hourly\_2021 IRP\_DSMBundle3.xml
- TS\_Hourly\_2021 IRP\_DSMBundle4.xml
- TS\_Hourly\_2021 IRP\_DSMBundle5.xml
- TS\_Hourly\_2021 IRP\_DSMBundle6.xml
- TS\_Hourly\_2021 IRP\_DSMBundle7.xml
- TS\_Hourly\_2021 IRP\_DSMBundle8.xml
- TS\_Hourly\_2021 IRP\_DSMBundle9.xml
- TS\_Hourly\_2021 IRP\_DSMBundle10.xml
- TS\_Hourly\_2021 IRP\_DSMBundle11.xml
- TS\_Hourly\_2021 IRP\_DSMBundle12.xml

- TS\_Hourly\_2021 IRP\_DSMBundle13.xml
- TS\_Hourly\_2021 IRP\_DSMBundleCS.xml
- TS\_Hourly\_2021 IRP\_DSMBundleDE.xml
- TS\_Hourly\_2021 IRP\_DSMBundleSolarPV.xml
- TS\_Hourly\_2021 IRP\_DSMBundleSolarPV\_BAULow.xml
- TS\_Hourly\_2021 IRP\_GoldenHills.xml
- TS\_Hourly\_2021 IRP\_HopkinsRidge.xml
- TS\_Hourly\_2021 IRP\_Klondike.xml
- TS\_Hourly\_2021 IRP\_LSR.xml
- TS\_Hourly\_2021 IRP\_LundHill.xml
- TS\_Hourly\_2021 IRP\_NewDERGround.xml
- TS\_Hourly\_2021 IRP\_NewDERRoof.xml
- TS\_Hourly\_2021 IRP\_NewSolar\_WA.xml
- TS\_Hourly\_2021 IRP\_NewSolarID.xml
- TS\_Hourly\_2021 IRP\_NewSolarWYAnticline.xml
- TS\_Hourly\_2021 IRP\_NewSolarWYWest.xml
- TS\_Hourly\_2021 IRP\_NewWind\_Offshore.xml
- TS\_Hourly\_2021 IRP\_NewWind\_WA\_Update.xml
- TS\_Hourly\_2021 IRP\_NewWindID.xml
- TS\_Hourly\_2021 IRP\_NewWindMTCentral.xml
- TS\_Hourly\_2021 IRP\_NewWindMTEastern.xml
- TS\_Hourly\_2021 IRP\_NewWindWYEast.xml
- TS\_Hourly\_2021 IRP\_NewWindWYWest.xml
- TS\_Hourly\_2021 IRP\_SkWind.xml

- TS\_Hourly\_2021 IRP\_WildHorse.xml
- Zone Definition\_2021 IRP.xml

### **1.6. Project Folder**

- Project File.xml

### **1.7. TemplateTables Folder**

- Grid.xml

## **2. Plexos Folder**

- PLEXOS\_Param.xml
- PLEXOS\_SolverParam.xml
- PSE\_IRP\_2021.xml

### **2.1. CSV Files Folder**

- Contract Rates IRP.csv
- Contract Rates.csv
- Contracts.csv
- DA Block Trade.csv
- End Volume.csv
- Fixed Hydro Schedule.csv
- Fixed Thermal Schedule.csv
- FixedCommit.csv
- Flexibility Requirement Incremental MTWind.csv
- Flexibility Requirement IRP.csv
- Flexibility Requirement.csv
- GHG Price.csv
- GoldenHills Forecast IRP.csv

- HopkinsRidge Forecast IRP.csv
- ID Trade.csv
- InFlow.csv
- Initial Volume.csv
- KlondikeIII Forecast IRP.csv
- Load\_Forecast\_Energy IRP.csv
- Load\_Forecast\_Peak IRP.csv
- LSR Forecast IRP.csv
- Lund Hill Forecast IRP.csv
- Lund Hill Solar Forecast IRP.csv
- MidC Canadian Entitlement IRP.csv
- Montana Wind LB.csv
- Montana Wind.csv
- MT\_Clearwater Forecast IRP.csv
- Non-Participating Wind Profiles.csv
- Participating Wind Profiles.csv
- Participating Wind Profiles\_DA.csv
- Participating Wind Profiles\_HA.csv
- Participating Wind Profiles\_RT.csv
- Pond Volume Daily Max.csv
- Pond Volume Daily Min.csv
- Powerdex\_MidC\_Hourly IRP.csv
- PSE BA Load Forecast IRP.csv
- PSE Load Forecast IRP.csv

- PSE Load Hour IRP.csv
- PSE Load RT IRP.csv
- ReratePMax.csv
- ReratePMin.csv
- Reserve Requirement IRP.csv
- Scheduled and Forced Outage.csv
- Scheduled Outage IRP.csv
- Skookumchuck Forecast IRP.csv
- Test Solar Forecast IRP.csv
- Vantage Forecast.csv
- WildHorse Forecast IRP.csv

## **2.2. gas price Folder**

- Stanfield Gas Price IRP.csv
- Sumas Gas Price IRP.csv

## **3. RAM Folder**

- capacity-Ferndale\_2027-20200705.npy
- capacity-Ferndale\_2031-20200705.npy
- capacity-Freddy\_2027-20200705.npy
- capacity-Freddy\_2031-20200705.npy
- capacity-Frederickson1\_2027-20200705.npy
- capacity-Frederickson1\_2031-20200705.npy
- capacity-Frederickson2\_2027-20200705.npy
- capacity-Frederickson2\_2031-20200705.npy
- capacity-Fredonia1\_2027-20200705.npy



- capacity-Fredonia1\_2031-20200705.npy
- capacity-Fredonia2\_2027-20200705.npy
- capacity-Fredonia2\_2031-20200705.npy
- capacity-Fredonia3\_2027-20200705.npy
- capacity-Fredonia3\_2031-20200705.npy
- capacity-Fredonia4\_2027-20200705.npy
- capacity-Fredonia4\_2031-20200705.npy
- capacity-Goldendale\_2027-20200705.npy
- capacity-Goldendale\_2031-20200705.npy
- capacity-MintFarm\_2027-20200705.npy
- capacity-MintFarm\_2031-20200705.npy
- capacity-Sumas\_2027-20200705.npy
- capacity-Sumas\_2031-20200705.npy
- capacity-Whitehorn2\_2027-20200705.npy
- capacity-Whitehorn2\_2031-20200705.npy
- capacity-Whitehorn3\_2027-20200705.npy
- capacity-Whitehorn3\_2031-20200705.npy
- Contracts-20200716.npy
- GoldendaleM28-20200609.npy
- GoldendaleM32-20200609.npy
- GoldenHills2027-20201030.npy
- GoldenHills2031-20201030.npy
- HopkinsRidge-20201030.npy
- hydroyears-BPA2016RateCase-20190103.npy

- KlondikeIII-20201030.npy
- Load27-20200918.npy
- Load31-20200918.npy
- LSR-20201030.npy
- LundHill-20201030.npy
- miscinput-LowerBaker-IRP2017.npy
- miscinput-SnoqualmieAndQFs-IRP2017.npy
- miscinput-ThirdPartyGeneration-IRP2017.npy
- miscinput-ThirdPartyLoad-20180912.npy
- miscinput-UpperBaker-IRP2017.npy
- MT\_Clearwater-20201030.npy
- RAM\_PSE\_IRP\_2021.ipynb
- RelibRec-Base2027-NREL-20201030.csv
- RelibRec-Base2031-NREL-20201030.csv
- Skookumchuck-20201030.npy
- WildHorse-20201030.npy
- Balancingreserve2023-20200702.npy
- Balancingreserve2030-20200702.npy
- capacity-Encogen\_2027-20200705.npy
- capacity-Encogen\_2031-20200705.npy