



# CSPP Forecast

IRPAC Presentation

March 11, 2021





# Cogeneration and Small Power Production Forecast

- This presentation is intended to provide an overview of the Cogeneration and Small Power Production (CSPP) forecast and its application to Idaho Power's Integrated Resource Plan.
  - CSPP includes all renewable generation that is delivered to Idaho Power under power purchase agreements.
  - Idaho Power has approximately 1,400 MW of renewable generation under contract.
  - CSPP generation is a contributor to Idaho Power's Clean Energy Goal.
  - CSPP forecast generation is included in the IRP as “must-take”, meaning that Idaho Power does not have control over the timing or amount of energy received from CSPP projects.
  - The variable characteristics of renewable resources require Idaho Power to balance the risk, cost, and integration of these resources with the clean energy benefits they can provide.

# CSPP Forecast



- Idaho Power Public Utility Regulatory Policies Act (PURPA) Qualifying Facility Energy Sales Agreements (ESA)
  - PURPA ESAs
- Idaho Power Renewable Energy Power Purchase Agreements (PPA)
  - Utility PPAs

# PURPA

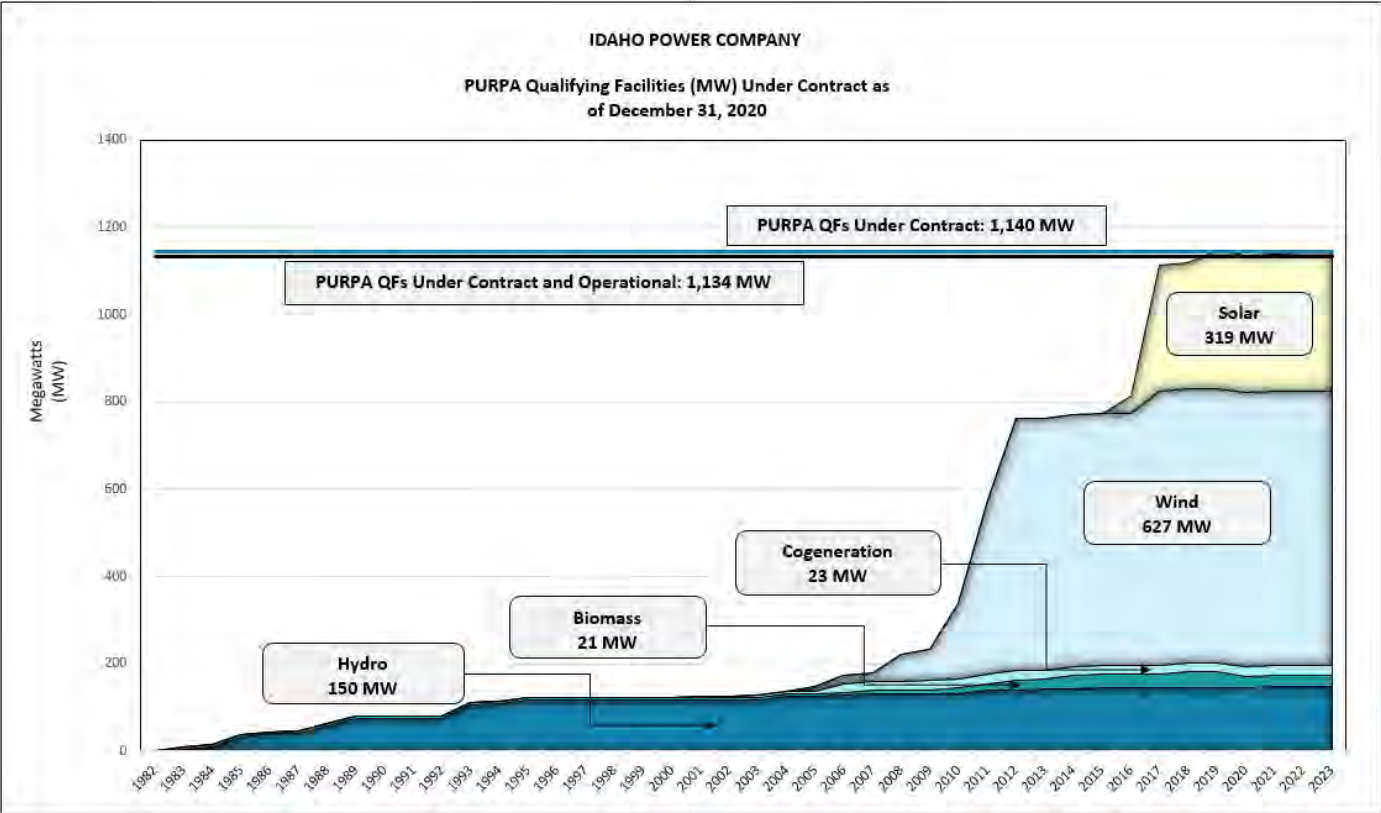


PURPA - Act passed by Congress in 1978 that requires utilities to buy energy from cogeneration or small power production (CSPP) projects that meet the definition of a qualifying facility (QF) and can deliver energy to the utility.

Congress created the mandate, implemented by:

- Federal Energy Regulatory Commission (FERC)
- State Commissions
  - Idaho Public Utilities Commission
  - Public Utility Commission of Oregon

# PURPA

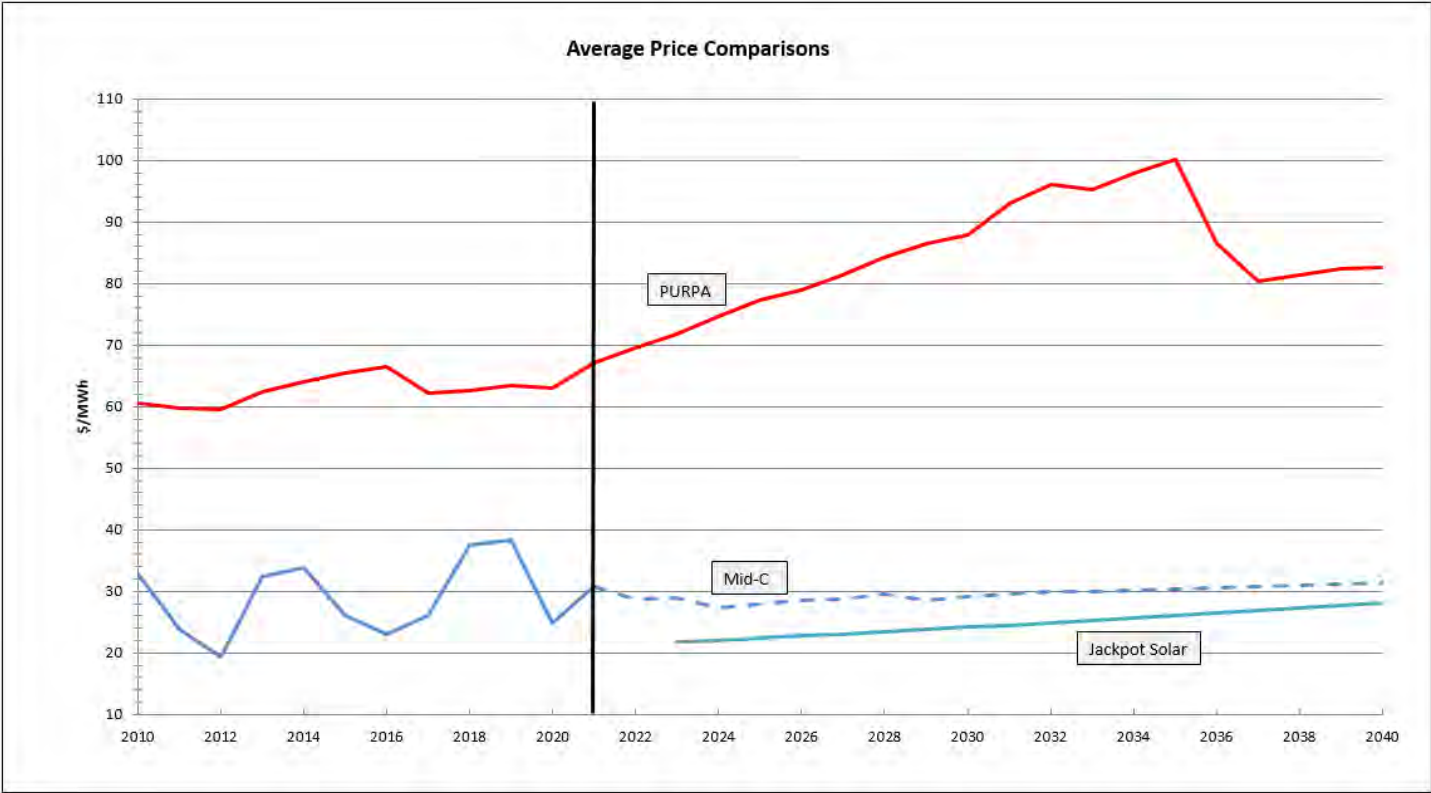


# PURPA



- Cost and Generation
  - In the 2019-2020 Power Cost Adjustment (PCA) Year PURPA accounted for 52% of total power costs but only 17% of total generation
- 2019-2020 PCA Year Cost Comparisons
  - Average cost of PURPA generation was \$62.60/MWh
  - Average market purchase price was \$19.61/MWh
  - Average market sales price was \$22.84/MWh

# PURPA



# PURPA



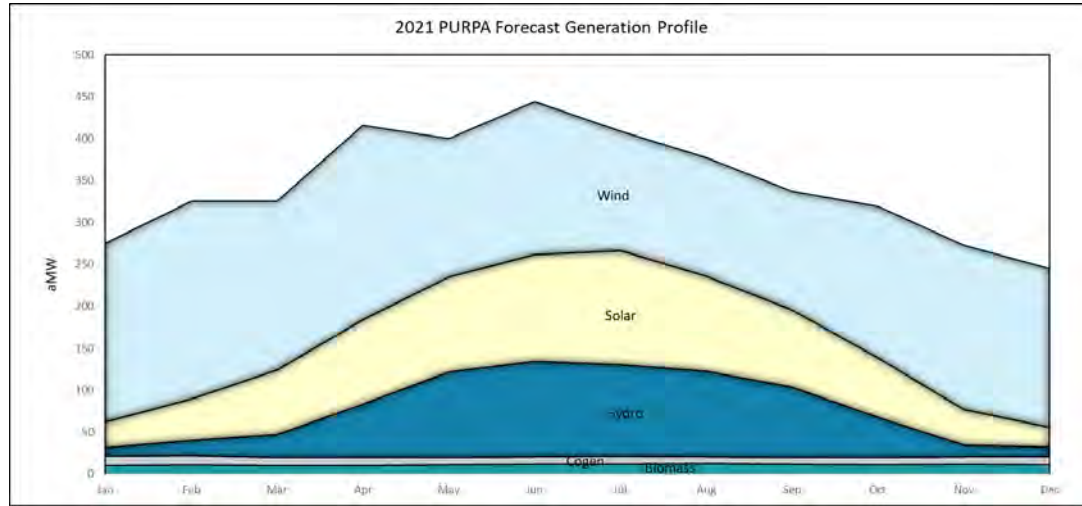
- Forecast Process
  - Fully executed ESAs
  - Forecast generation begins on project's scheduled operation date
  - Up to 5 years of monthly average generation
  - Use contract estimates
  - Forecast 12 months then repeat
  - Adjustments
- Forecast Assumptions
  - Replacement contracts for all resource types, except wind
    - Sensitivity analysis to be performed
  - Do not forecast or predict future development



# PURPA

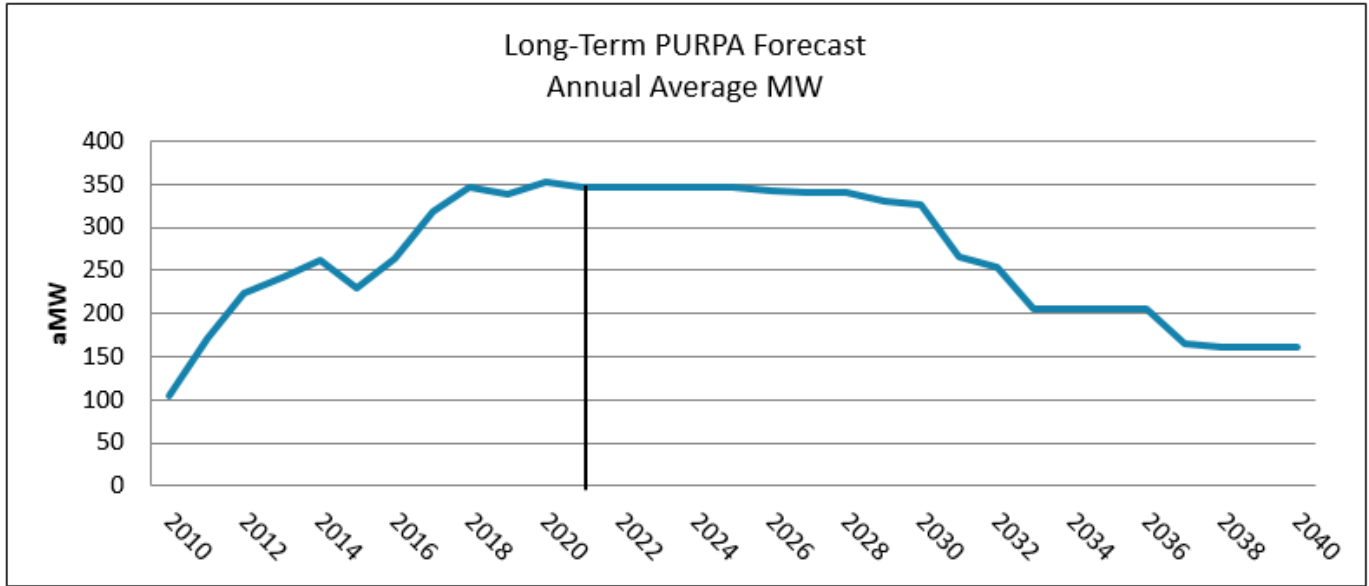


| Month | 2021 PURPA Forecast (aMW) |       |       |       |      |       |
|-------|---------------------------|-------|-------|-------|------|-------|
|       | Biomass                   | Cogen | Hydro | Solar | Wind | Total |
| Jan   | 10                        | 11    | 10    | 31    | 214  | 276   |
| Feb   | 10                        | 12    | 18    | 50    | 237  | 326   |
| Mar   | 10                        | 10    | 27    | 77    | 201  | 325   |
| Apr   | 10                        | 10    | 63    | 101   | 232  | 416   |
| May   | 10                        | 9     | 102   | 113   | 166  | 401   |
| Jun   | 11                        | 9     | 114   | 128   | 183  | 444   |
| Jul   | 11                        | 10    | 109   | 136   | 143  | 409   |
| Aug   | 12                        | 8     | 102   | 114   | 142  | 378   |
| Sep   | 11                        | 8     | 84    | 92    | 141  | 337   |
| Oct   | 11                        | 8     | 48    | 71    | 181  | 319   |
| Nov   | 11                        | 9     | 15    | 42    | 195  | 272   |
| Dec   | 11                        | 9     | 12    | 23    | 190  | 245   |



# PURPA

| Year | Annual aMW |
|------|------------|
| 2010 | 104        |
| 2011 | 171        |
| 2012 | 224        |
| 2013 | 242        |
| 2014 | 262        |
| 2015 | 229        |
| 2016 | 264        |
| 2017 | 319        |
| 2018 | 347        |
| 2019 | 338        |
| 2020 | 352        |
| 2021 | 346        |
| 2022 | 346        |
| 2023 | 346        |
| 2024 | 346        |
| 2025 | 346        |
| 2026 | 342        |
| 2027 | 341        |
| 2028 | 341        |
| 2029 | 331        |
| 2030 | 326        |
| 2031 | 266        |
| 2032 | 254        |
| 2033 | 206        |
| 2034 | 206        |
| 2035 | 206        |
| 2036 | 206        |
| 2037 | 165        |
| 2038 | 162        |
| 2039 | 162        |
| 2040 | 161        |



# Renewable Energy PPAs



In addition to the 1,140 megawatts (MW) of PURPA QFs under contract, Idaho Power has utility PPAs with four renewable energy projects totaling 256 MW.

- Elkhorn Valley (Wind)\* 101 MW
- Raft River Unit #1 (Geothermal)\* 13 MW
- Neal Hot Springs Unit #1 (Geothermal)\* 22 MW
- Jackpot Holdings, LLC (Solar) 120 MW

\*These resources were identified in previous IRP processes, requests for proposal were issued, and these were the selected projects.

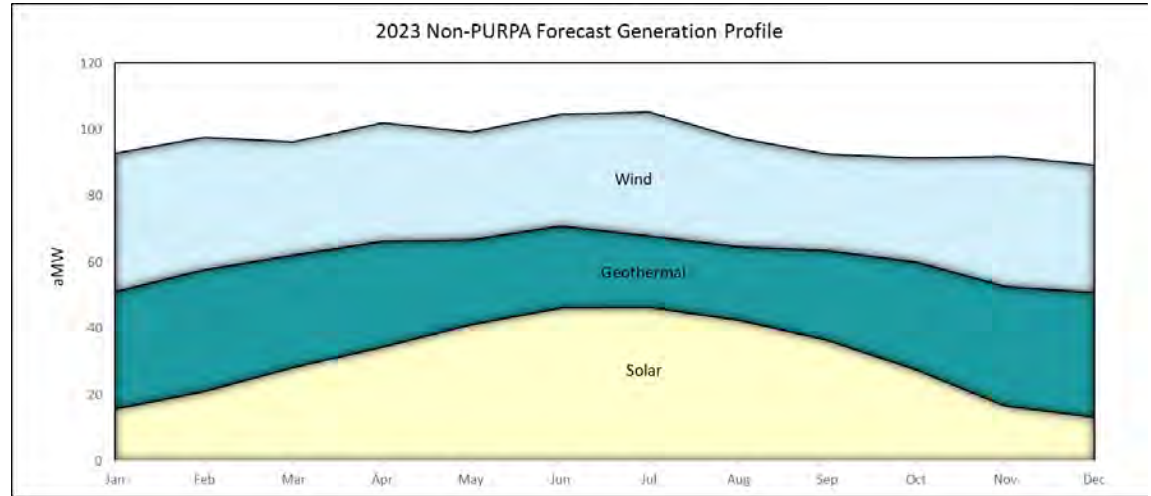
# Renewable Energy PPAs



- Forecast Process
  - Fully executed PPAs
  - Forecast generation begins on project's scheduled operation date
  - Up to 5 years of monthly average generation
  - Use contract estimates
  - Forecast 12 months then repeat
  - Adjustments
  
- Forecast Assumptions
  - No replacement PPAs

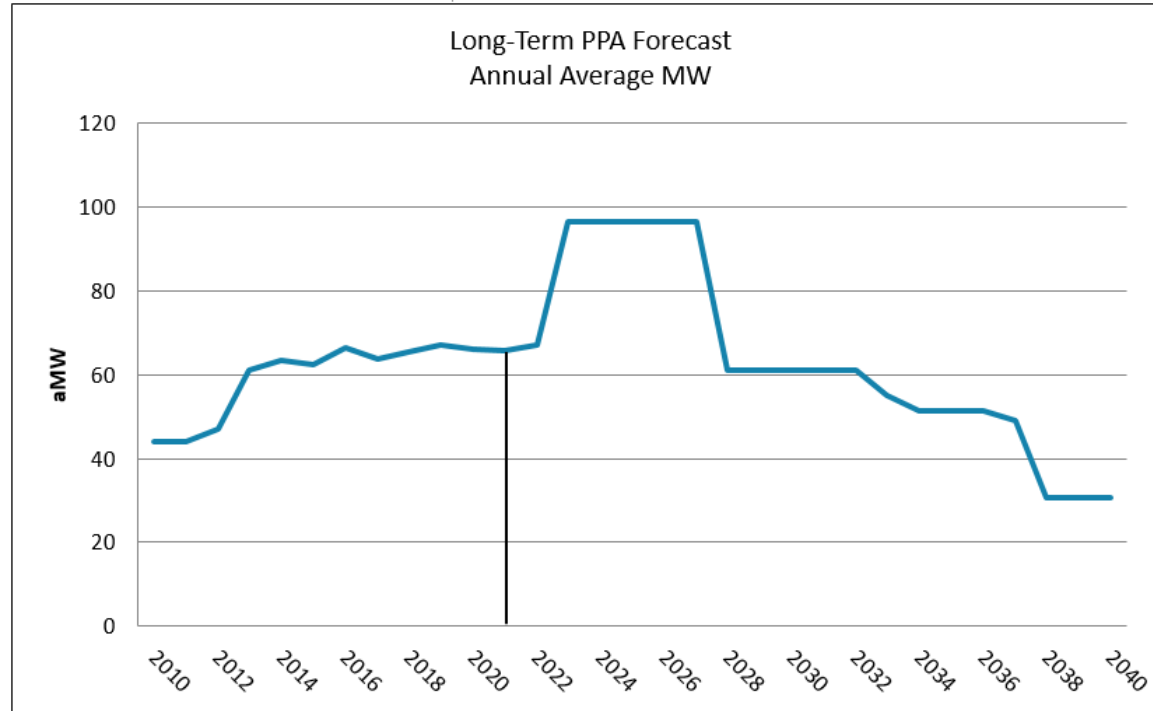
# Renewable Energy PPAs

| Month | 2023 Non-PURPA Forecast (aMW) |       |      |       |
|-------|-------------------------------|-------|------|-------|
|       | Geothermal                    | Solar | Wind | Total |
| Jan   | 35                            | 16    | 42   | 93    |
| Feb   | 37                            | 21    | 40   | 98    |
| Mar   | 34                            | 28    | 34   | 96    |
| Apr   | 32                            | 35    | 36   | 102   |
| May   | 26                            | 41    | 33   | 99    |
| Jun   | 25                            | 46    | 34   | 105   |
| Jul   | 21                            | 46    | 37   | 105   |
| Aug   | 22                            | 43    | 33   | 97    |
| Sep   | 27                            | 36    | 29   | 92    |
| Oct   | 33                            | 28    | 31   | 91    |
| Nov   | 36                            | 17    | 39   | 92    |
| Dec   | 38                            | 13    | 38   | 89    |



# Renewable Energy PPAs

| <u>Year</u> | <u>Annual aMW</u> |
|-------------|-------------------|
| 2010        | 44                |
| 2011        | 44                |
| 2012        | 47                |
| 2013        | 61                |
| 2014        | 64                |
| 2015        | 62                |
| 2016        | 67                |
| 2017        | 64                |
| 2018        | 66                |
| 2019        | 67                |
| 2020        | 66                |
| 2021        | 66                |
| 2022        | 67                |
| 2023        | 97                |
| 2024        | 97                |
| 2025        | 97                |
| 2026        | 97                |
| 2027        | 97                |
| 2028        | 61                |
| 2029        | 61                |
| 2030        | 61                |
| 2031        | 61                |
| 2032        | 61                |
| 2033        | 55                |
| 2034        | 52                |
| 2035        | 52                |
| 2036        | 51                |
| 2037        | 49                |
| 2038        | 31                |
| 2039        | 31                |
| 2040        | 31                |



# CSPP Forecasts



Questions and Comments