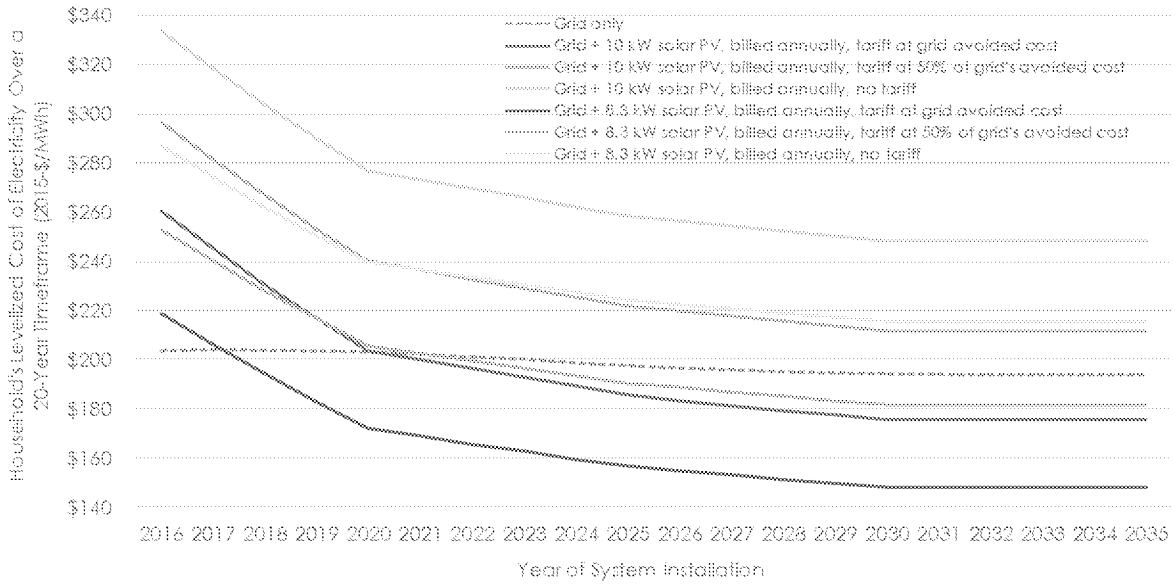
# DER: Grid parity considerations

- The point in time at which the cost of implementing a given DER technology becomes equivalent to the cost of grid electricity supply is often referred to as "grid parity". Factors influencing grid parity include:
  - **DER Technology Costs:** Including capital, borrowing costs, and ongoing operations and maintenance costs.
  - **DER Technology Performance:** Operating characteristics of technology and fuel limitations.
  - **Cost of Grid Supply:** Not all cost components of the electricity bill can be avoided by DER so long as a customer remains grid connected.
  - **Level of Incentives:** Government support can accelerate the timing of grid parity.
  - **Connection Configuration:** DER can be installed in a variety of configurations (such as separately metered, behind the meter, net metered, or off-grid) which have differences in the benefit and cost streams considered. Procurement programs can also influence how customers configure their installations.
  - **Consumer Load Profile:** Alignment of DER electricity output with customer electricity load profile.
  - **Evaluation Perspective:** What may be economic from one type of customer's perspective (e.g. utility, developer, residential consumer, industrial consumer, etc) may not be economic for another, or for the electricity system as a whole.
  - **Customer Reliability Expectations:** A DER resource may be installed as the primary source of power or as a back-up power source. A higher degree of electricity supply reliability requires greater level of investment. This is of particular importance for off-grid systems.

# DER: Grid parity considerations (continued…)

- DERs have the effect of reducing the amount of energy required from the provincial grid to supply the customer's electricity needs
- The cost of electricity includes fixed costs (cost which do not vary with energy consumption) associated with the capital and maintenance cost of existing bulk system assets and payments made to electricity generators for the power they produce, which includes incentives paid for DER. The majority of costs to operate the electricity system are non-variable, so as electricity consumption declines, those costs are recovered across smaller volumes. In principle this reduces the likelihood of existing assets being stranded, but it also can lead to a circle of increasing bulk costs encouraging more grid defection.
- Recovery of tariff payments and reduced utility revenues lead to higher average electricity costs for non-participating customers who do not change their electricity consumption. Average rates increase as the cost numerator rises while the grid sales denominator declines.

**Grid parity in the context of net-metering:** The point at which net-metered solar PV systems become economical will depend heavily on what tariff is set and how rates are designed. Having the right tariff/rate design can help better inform investment decisions while better capturing the value DERs provide.

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