

# Long Term Vision

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- ▶ Cell phone tower (2kW):
  - Power needs include reliable startup and running on hydrocarbon, likely propane.
- ▶ Residential (few kW):
  - Leverage CHP, assuming exhaust temp is at least sufficient for water heating.
  - Needs to run on NG and needs integrated reforming.
  - Variability of NG an issue. Would run continuously and feed grid when not needed for home power.
  - Consumer Acceptance could be an issue.
- ▶ Community (100 kW):
  - Advantages of integrating over a load distribution.
  - Felt to be more beneficial to the grid (power providers).
  - Easier to standardize and acceptance (other than cost) less of an issue.

# Additional Attributes and Technology Needs

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- ▶ Fuel flexible - at least the reformer module must be.
- ▶ Hybrid generation and storage perhaps but storage probably only a small fraction of generation capacity.
- ▶ Perhaps reversible.
- ▶ Component and feature developments needed: membrane, catalysts, material development, microstructural development, glass seals, anode, cathode, and electrolyte, electrode reforming