



# Redox Power Systems

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# Bending the Cost Curve

*Redox is developing distributed power generation systems based on a lower temperature, higher power density solid oxide fuel cell (SOFC) that will be cost competitive with the grid.*



— The Redox Cube —

- 25 kW rated power
- fueled by natural gas
- > 54% efficiency
- Compact footprint ( $\sim 1 \text{ m}^3$ )

## Technological enhancements that reduce costs:

- 1. Lower temperature:** Redox SOFCs operate at  $\sim 600$  degrees Celsius vs. other SOFCs which operate as high as  $\sim 900$  degrees Celsius. This lower operating temperature enables Redox to use less costly commodity materials (e.g. stainless steel).
- 2. Higher power density:** Cell and stack power densities  $> 1.5 \text{ W/cm}^2$  with cell sizes as large as 10 cm by 10 cm ( $\sim 4''$  by  $4''$ ). Higher power density means fewer cells are needed to generate the same power output.
- 3. Less expensive BOP:** Temperatures are still hot enough that internal reforming is possible, but low enough to reduce blower and heat exchanger requirements.