

# High Efficiency High Temperature Modular Power

(HOTHARVEST)

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**Go Process  
Intensification**

# Cycle Design

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- $\leq 1$  MWe Modular **Stationary (non-transient)** Power
- 60% 1<sup>st</sup> law thermodynamic cycle efficiency
- Compact (~ 1 MWe should fit inside a 40ft container)
- \$2000/KWe installed at scale cost
- Uses a fuel source (**Natural gas**)
- Cycle design/type open
- **Phase I (2 years) followed by a Phase II (3 years)**
- Flexibility to adjust metrics for Phase II

# Turbo Machinery

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- **Allow for ~ 30% of system cost (~\$600/MWe)**
- **Turbine inlet Temp.  $\geq 700\text{C}$**
- **Isentropic efficiency  $\geq 90\%$**
- **Operational reliability 25000 hours before overhaul**

# Heat Exchangers

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- **Allow for ~ 30% of system cost (~\$600 /UA)**
- **$(\Delta P)/P_i \leq 3\%$**
- **Operating pressures  $\geq 80$  bars**
- **Operating Temp. (per turbine inlet temp.  $\geq 700^\circ\text{C}$ )**
- **Operational reliability 25000 hours before overhaul**
- **Non transient ( $\leq 365$  cycles/year)**



***Thank You!***