

# E-FUEL PERSONAL ENERGY SYSTEM (PES) TECHNOLOGY

## Media Question and Answer

Press Release

Op-Ed; Tom Quinn, CEO E-Fuel Corporation

Website; [www.efuel100.com](http://www.efuel100.com)

Twitter; @efuel

- Question: Who are your targeted customers?
- Answer: Customers wanting to go off grid because they are frustrated with the escalating cost of their energy bills, unreliable utility power and concern for decreasing global warming emissions.
- Question: Who is your competition?
- Answer: Public Utility Companies, petroleum fueled generators, solar and battery backup systems.
- Question: What's the most unique PES technology?
- Answer: PES ability to operate using low cost hydrous ethanol fuel, which can be homebrewed, in addition to other commercial fuels. Second, PES ability to capture combustion heat and repurpose to heat the home or business.
- Question: What makes the PES better than your competition?
- Answer: PES energy density could produce up to 1100 watts/foot compared to solar 10 watts/foot making it possible to power a complete facility continuously. The PES energy density will not decline over time compared to solar and batteries. PES provides free heating during power production versus solar and PUC which does not.
- Question: How is the PES cost competitive against PUC, solar and batteries?
- Answer: The ability to heat homes at no cost and removing the monthly heating bill, is a major cost advantage.
- Question: What does the PES cost before subsidies?
- Answer: \$2 per watt before subsidies
- Question: How does the PES compare with solar and Tesla Powerwall?
- Answer: PES requires refueling but its power density will never decline over time the way solar and batteries do, leading to expensive replacement cost. PES offers complete off grid operation for weeks versus a few hours when utilizing solar and batteries. PES is also less expensive per watt compared with solar and batteries without tax subsidies. Ref; <http://thehill.com/blogs/pundits-blog/energy-environment/302900-solar-energy-cant-survive-without-massive-subsidies>
- Question: What is the product warranty?
- Answer: Two-year base parts and workmanship warranty with lifetime option to extend
- Question: How long will the combustion engine last
- Answer: More than a lifetime if properly maintained: See Forbes ref; <https://www.forbes.com/sites/bertelschmitt/2017/07/20/the-internal-combustion-engine-will-survive-us-all/#4d8c54da3a3d>
- Question: How does someone utilize PES repurpose heating?

- Answer: By installing separate hot water storage tanks to heat the internal home, hot water tank or swimming pool. The repurpose heat is captured using a radiant heat exchanger at the engine exhaust header, then transferred throughout the facility. Ref; <http://www.houseneeds.com/heating/radiant-heat-plex-tubing>
- Question: How are fuel delivery service handled?
- Answer: The E-Fuel dealer will arrange local fuel delivery service to maintain the PES fuel and oil tank replenishment. The PES has tank sensors that alert dealer and customer when refilling is required.
- Question: What modifications to my home are required to use the system?
- Answer: E-Fuel will arrange dealer installation team to setup the PES system at the location and obtain the proper municipality permits. There will be an electrical power transfer switch added to the main facility power panel. The transfer switch will be the main communication between the PES, home and PUC. A plumber will install heat exchange transfer piping to the facility and swimming pool.
- Question: Do you have information regarding ethanol greenhouse gas emission trends?
- Answer: Ref: [https://www.usda.gov/oce/climate\\_change/mitigation\\_technologies/Ethanol\\_Report\\_Factsheet\\_Final.pdf](https://www.usda.gov/oce/climate_change/mitigation_technologies/Ethanol_Report_Factsheet_Final.pdf)
- Question: DOE slide regarding energy waste?
- Answer: <https://www.slideshare.net/robsklein/green-turbine-ivey-presentation-november-18-2009>
- Question: US oil crisis and Brazil oil crisis references?
- Answer: [https://en.wikipedia.org/wiki/1973\\_oil\\_crisis](https://en.wikipedia.org/wiki/1973_oil_crisis) Brazil; <https://www.csmonitor.com/1983/0323/032328.html>
- Question: Do you have information regarding California and New York power outages?
- Answer: California: <http://www.pgecurrents.com/2017/06/19/pge-restores-power-as-heat-wave-grips-much-of-california/> New York: [http://nypost.com/2017/08/12/how-cuomo-is-building-blackouts-for-nyc/?utm\\_campaign=partnerfeed&utm\\_medium=syndicated&utm\\_source=flipboard](http://nypost.com/2017/08/12/how-cuomo-is-building-blackouts-for-nyc/?utm_campaign=partnerfeed&utm_medium=syndicated&utm_source=flipboard)
- Question: Can you explain how you are more competitive than battery backup competitors?
- Answer: LA Times, Current problems with going off-grid: <http://www.latimes.com/business/la-fi-home-energy-storage-20170813-story.html>
- Question: Do you have reference for world spending \$48 trillion dollars?
- Answer: IEA Report: <https://www.iea.org/newsroom/news/2014/june/world-needs-48-trillion-in-investment-to-meet-its-energy-needs-to-2035.html>
- Question: How do you provide 99% reduction in emissions?
- Answer: Coal is still the number one source of energy used to generate power. The PES is the only product that can provide long-term off grid operation utilizing clean organic fuel. Ref; EIA <https://www.eia.gov/tools/faqs/faq.php?id=77&t=11>
- Question: Do you have reference material regarding battery carbon dioxide solar and greenhouse gases?
- Answer: <http://www.cleanenergyauthority.com/solar-energy-news/green-illusions-distorts-solar-on-environment-060712/>  
[https://e360.yale.edu/features/the\\_greenhouse\\_gas\\_that\\_nobody\\_knew](https://e360.yale.edu/features/the_greenhouse_gas_that_nobody_knew)