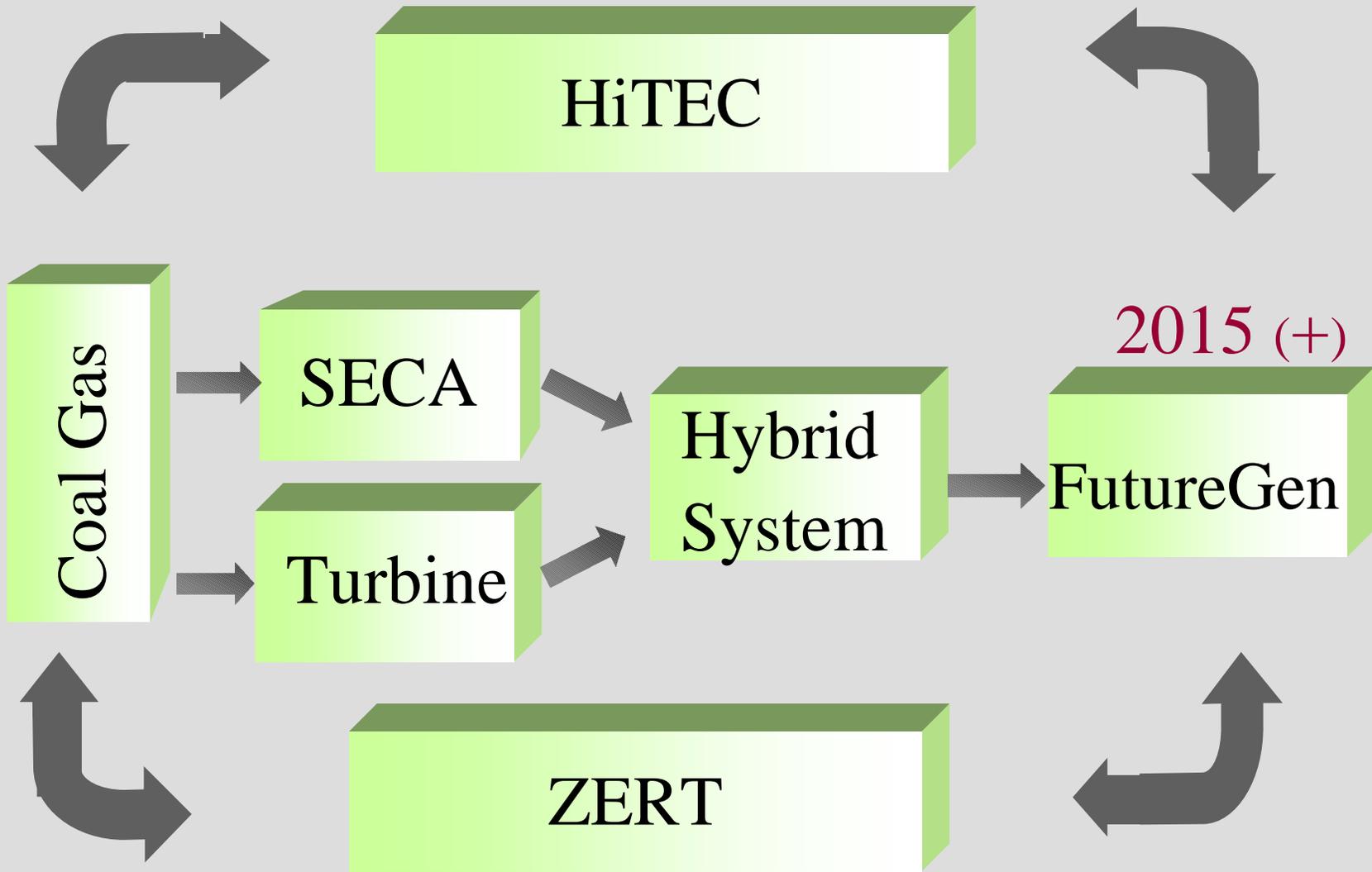


Energy for the Future

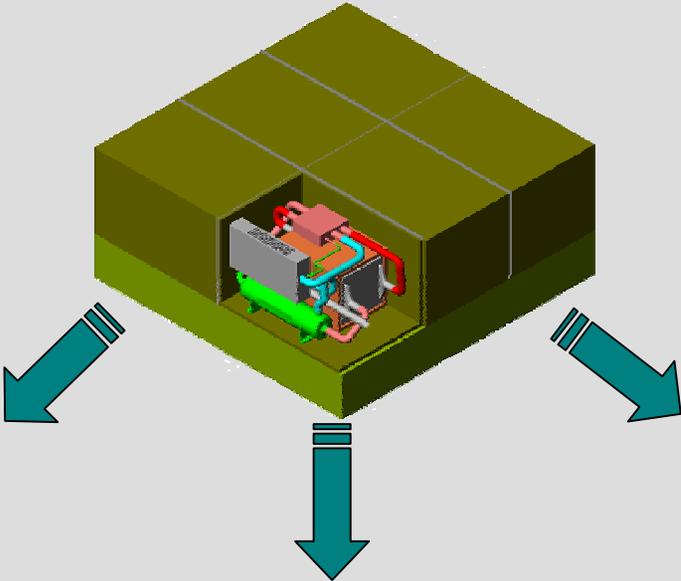
Montana is a key player

by
Gary L. McVay

Primary FE Focus



Cost Reduction Concept



Land Base



Transportation



Military

The Need

A Way for other government agencies to more easily leverage the Advanced Energy Conversion Systems and adapt them to their specific applications.

The Solution

- ▶ Expand the scope of HiTEC to enable adaptation of Advanced Energy Conversion Systems.
 - | Establish a steering committee with representatives from DOD, NASA, and DOE to define pathways from DOE-FE Advanced Energy Conversion Systems to their applications.
 - | Each agency funds the part of their pathway that is specific to their needs.
 - | Can develop new applications / products at a fraction of the total cost.

Fuel Cell is more efficient than engine at generating electrical power in cruise

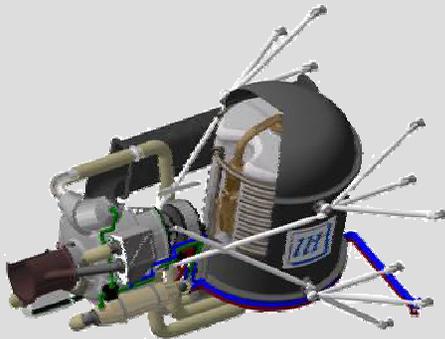


40-45% Efficient
(Jet-A to electrical
during cruise)

=



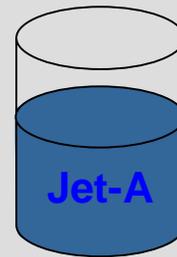
1 litre 40% less
fuel used



Future 2015
SOFC APU

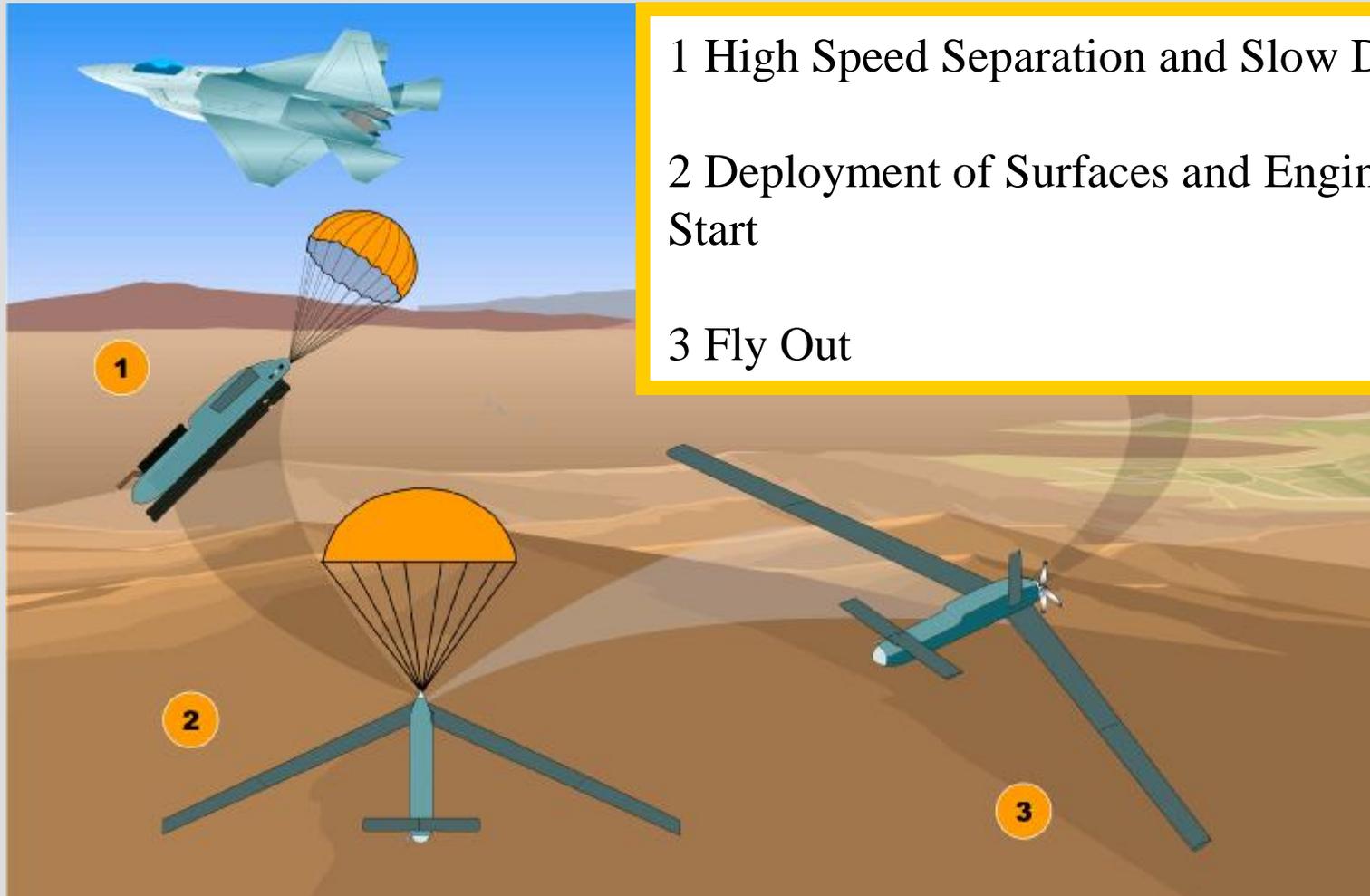
≈75% Efficient
(Overall system at cruise)

=



0.6 litre

Dominator Deployment Concept



1 High Speed Separation and Slow Down

2 Deployment of Surfaces and Engine Start

3 Fly Out

Conclusion

- ▶ Affordable energy is critical to the US Economy.
- ▶ The US has 25% of the worlds coal (Montana has 25% of the US coal) and we must use it to produce electricity in the future. However, it must be used more efficiently and in a more environmentally friendly manner.
- ▶ Advanced Energy Conversion devices will allow the remaining fossil fuel to last twice as long or produce twice as much electricity.
- ▶ Low cost fuel cells are critical to advanced energy conversion and are being developed by SECA.
- ▶ Both HiTEC and ZERT serve as technology underpinnings for the FutureGen concept.

Conclusion's Cont.

- ▶ The Expanded HiTEC Scope is necessary to enable the adaptation of DOE-FE's Advanced Energy Conversion Systems to other government agency needs at a tremendous cost and time saving, and to assure a commercially viable, affordable fuel cell.
- ▶ Montana plays a key role in advanced energy conversion and is well positioned to be a technology leader in the US energy future.