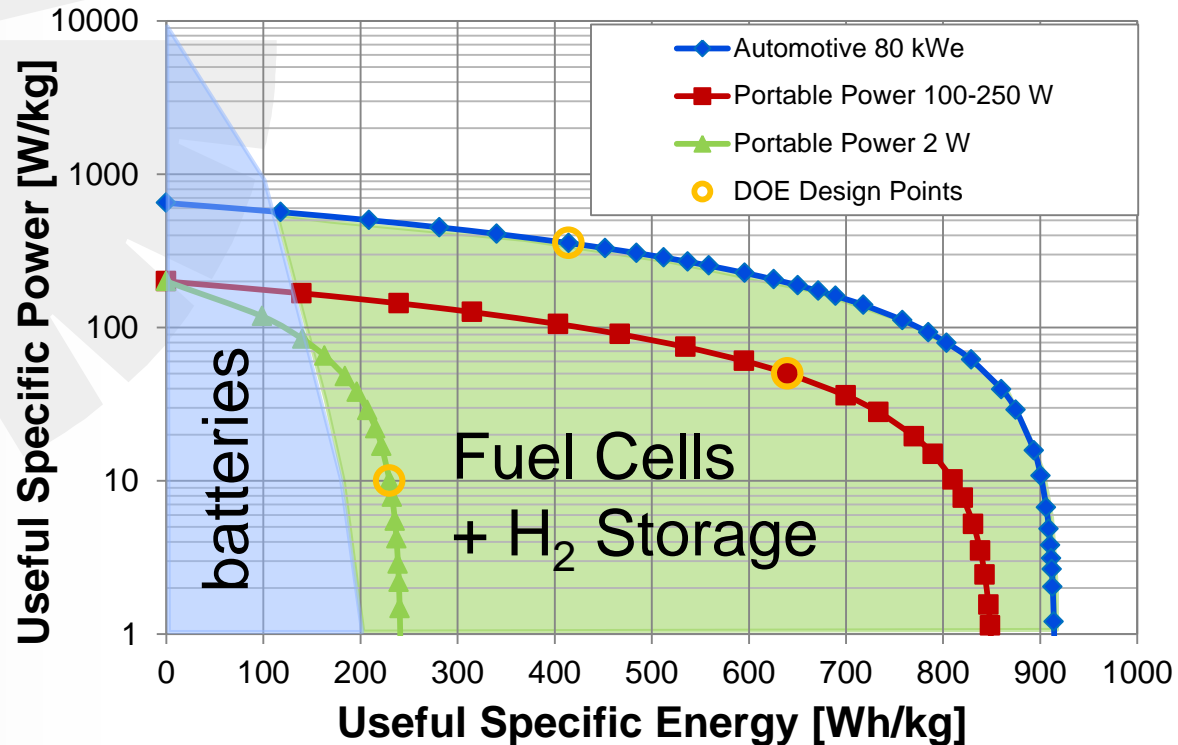


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Niche Application Opportunities

Bart A. van Hassel
United Technologies
Research Center (UTRC),
East Hartford,
Connecticut, USA

DOE Materials-Based
Hydrogen Storage Summit
Defining pathways for onboard
automotive applications
Golden, CO, USA
January 27-28, 2015



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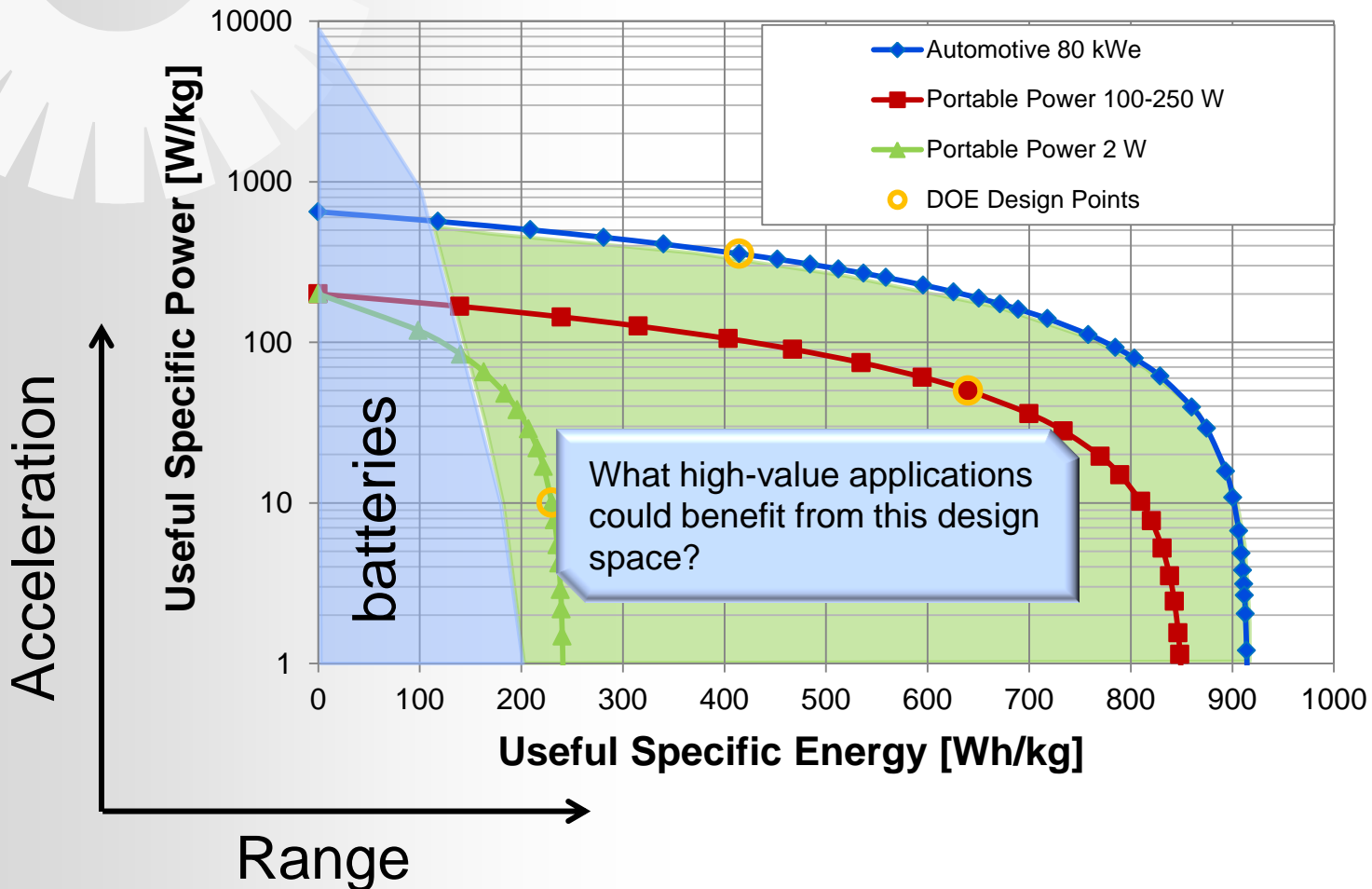
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Power System

Even H₂ storage systems with > ~1.2 wt.% and <~5.5 wt.% gravimetric system capacity open up an exciting design space.



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Concluding Remarks

- Progress towards DOE's Fuel Cell and H₂-storage targets for light-duty vehicles enables other high-value applications and this design space warrants mapping and possible further exploration and development
- It is important to understand how fuel cell and H₂-storage technology systems scale with power (acceleration) and energy storage requirements (endurance, range). Ask for weight and volume over a range for sensitivity studies and mapping.
- Multi-scale System Modeling is an efficient method to gauge performance of fuel cell and H₂-storage systems in practical applications.
- Advanced battery chemistries are in development that encroach into the fuel cell + H₂-storage system design space.
- Off-ramps can be expected to have different targets than the existing 18 targets that need to be met simultaneously for light-duty vehicle applications.

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Questions and suggestions?



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- Fuel Cell and Hydrogen Energy Association (FCHEA):
 - <http://www.fchea.org/>
- Canadian Hydrogen and Fuel Cell Association (CHFCA):
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 - <http://www.unmannedsystemstechnology.com/>

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