



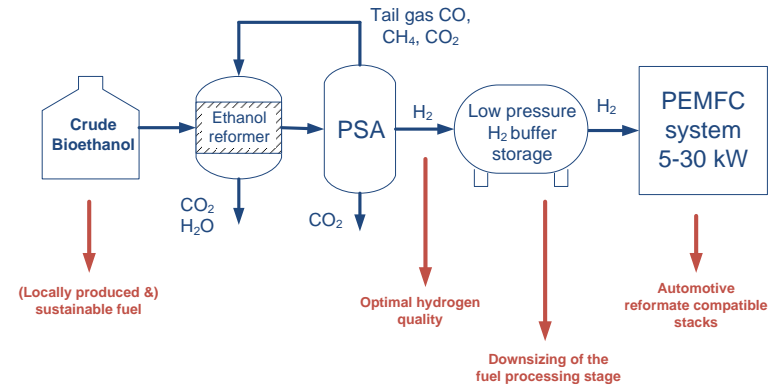
Pictures: from Genport and Ballard web pages

Background and motivation

- Telecom back-up and off-grid power is one of the strongest markets for fuel cells today
 - Competitive total cost of ownership (TCO) especially in long back-up (several days) or completely off-grid applications
- Need for reliable, cost-competitive and environmentally sustainable solutions growing
 - Low quality bioethanol fuel would allow use of locally produced and sustainable fuel also in developing countries
- Relatively high investment cost and fuel logistics key challenges slowing market penetration

Objectives

- Developing an integrated PEM fuel cell based power system for stationary back-up and off-grid power generation, that is
 - Using crude (80-95%) bioethanol as primary fuel
 - Cost-competitive (complete system < 2 500 €/kW @ 500 units)
 - Energy-efficient (> 30% overall system efficiency)
 - Durable (> 20 000 hours system lifetime in continuous operation)
- Laboratory testing and limited field trial (~1000 hours)
- A roadmap to volume production one of main project deliverables



Main outcome

- Applications / End users
 - Long back-up and off-grid power (mainly telecom in developing countries)
 - Power production and grid stabilization for micro grids
- In addition to the complete system, development of separately utilizable subsystems is another main outcome of the project
 - PEMFC system for back-up/off-grid application using low-grade hydrogen fuel
 - Low-cost, state-of-the-art PEMFC stack for various applications
 - Crude bioethanol processor unit (reformer + PSA) for distributed H2 generation

- Project volume 4,6 M€ total budget / 378 person-months total
- Duration 3 years, May 2014 – April 2017



More information:

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