

European Micro-CHP developments

Edificios Eficientes y Microcogeneracion

8th of October 2008

Delta Energy & Environment

David Morgado

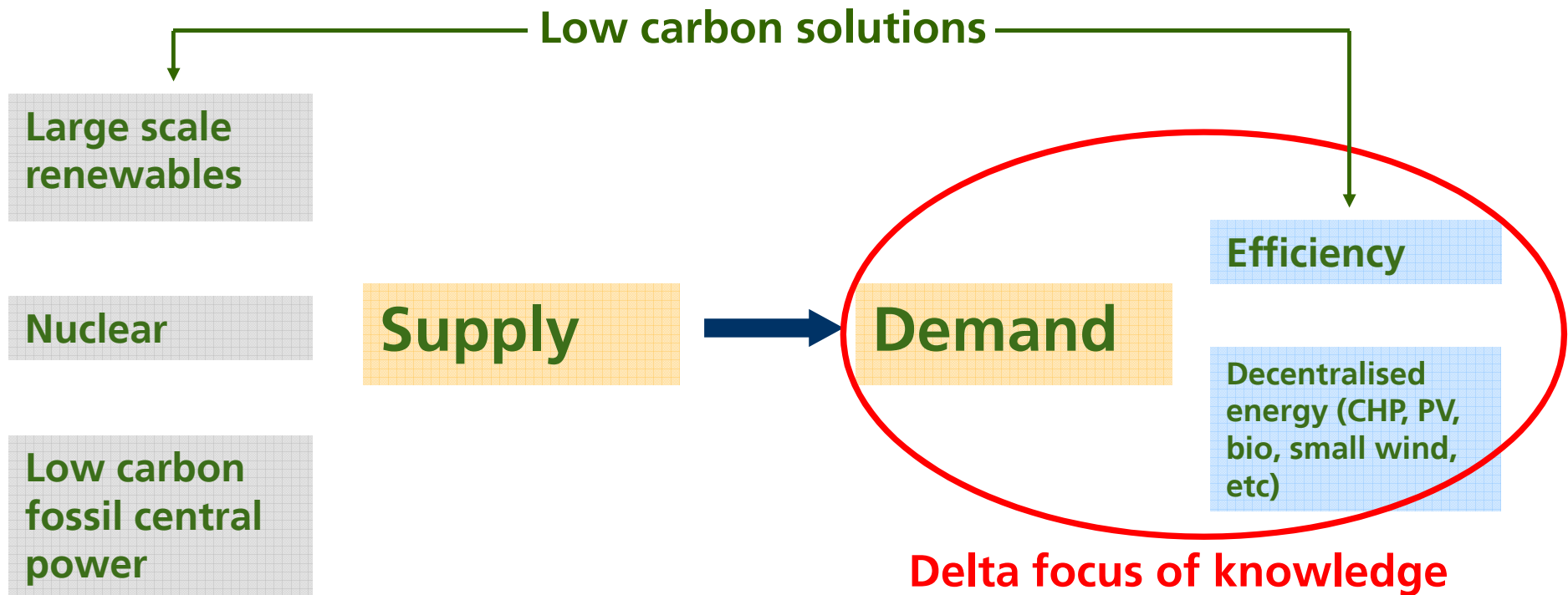
Consultant

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What is our expertise?

Niche expertise: understanding DE & energy efficiency markets



Introducing Delta

Deep DE knowledge

- Markets and economics
- Policy and regulation
- Commercial strategies
- Technologies

Why Delta?

- DE & efficiency is our core business
- Clear focus of expertise
- 80% of our work is non-competitive
- 60%+ of our work is returning clients

Highly experienced team

- **3 Directors** – 35 yrs DE experience
- **6 staff** – recruited since Apr 2007
- **Yasushi Santo** (Associate), ex-senior manager at Osaka Gas
- **David Sigsworth** (Associate), ex-board Director at Scottish & Southern Energy

What is Micro-CHP?

Combined Heat and Power (CHP) = Cogeneration

Micro-CHP: 0.5 kWe to 5 kWe at residential level and small business

Most developers focusing on 1 kWe

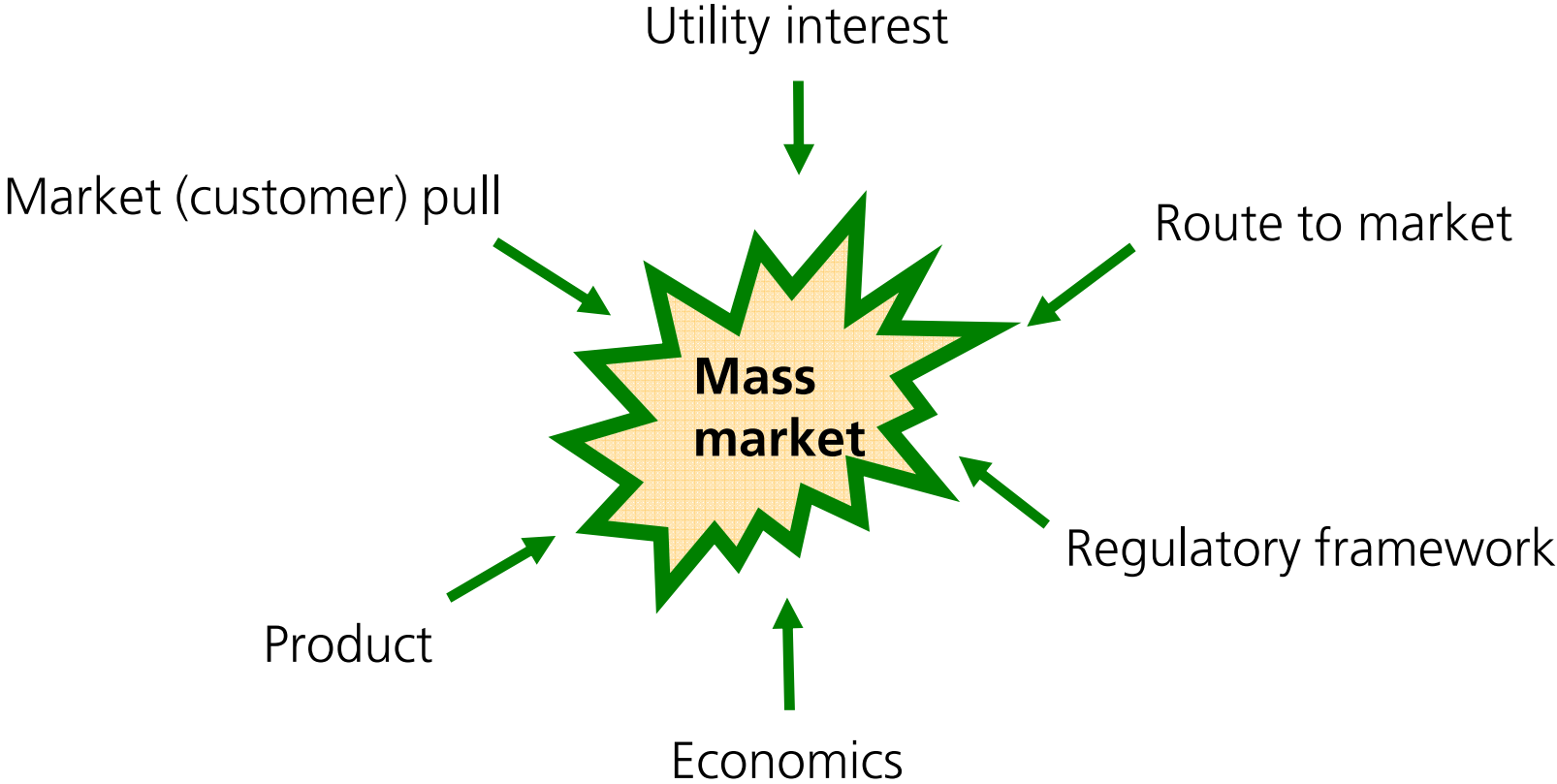
Objective: To replace every boiler in an average house

Technology types {

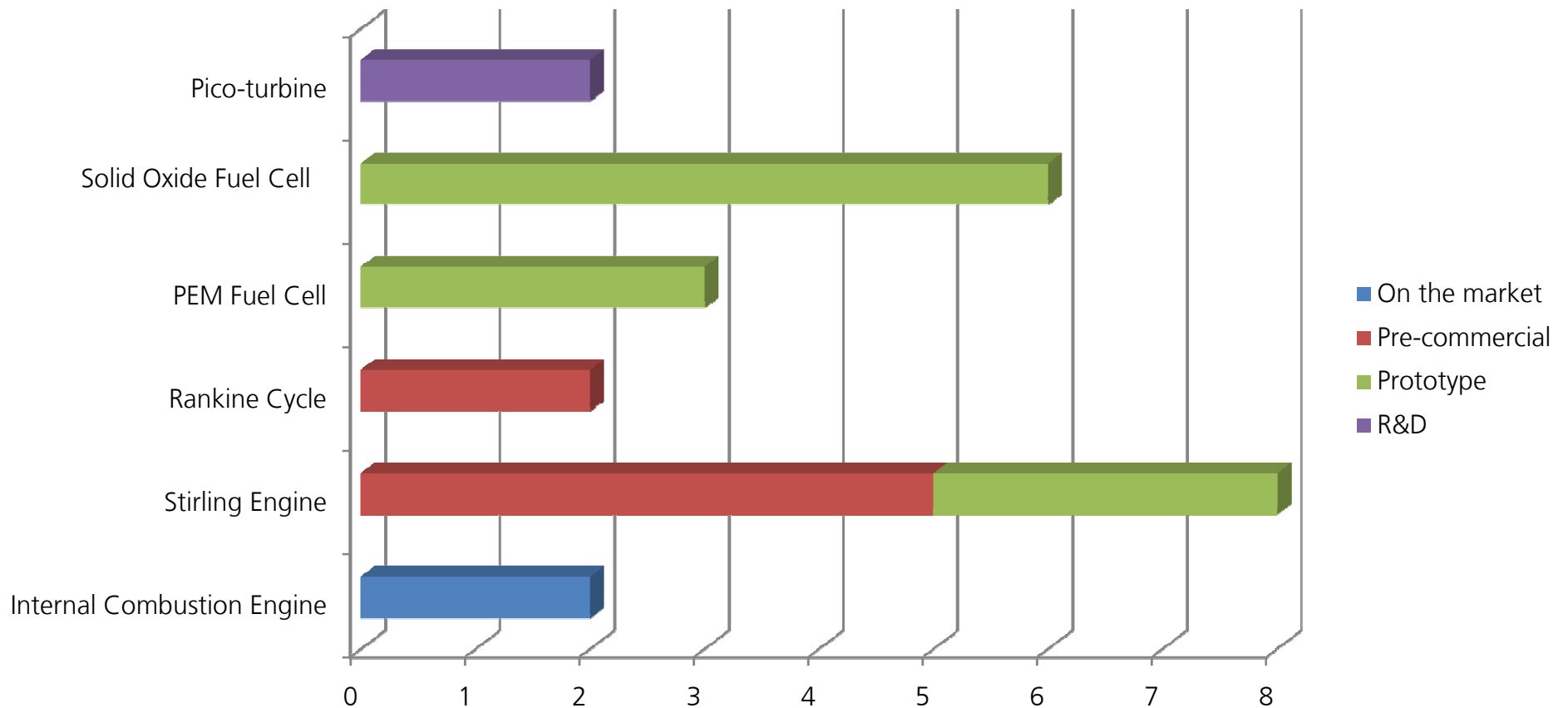
- Internal Combustion Engine
- Stirling Engines
- Rankine Cycle
- Fuel Cells



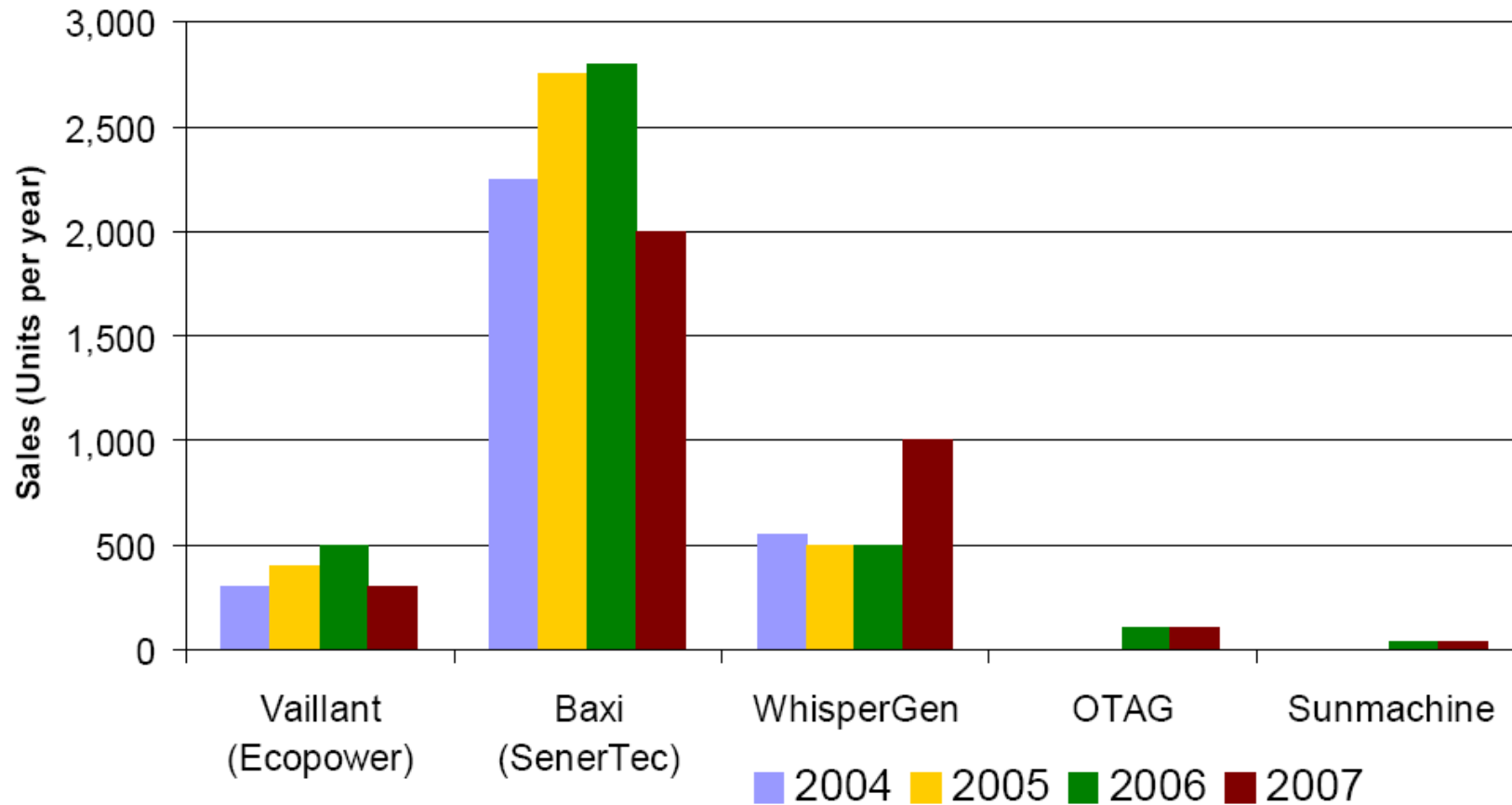
Six Ingredients for Micro-CHP Heaven



Product Developers in Europe



European Market Sales



Demonstrations and Trials



Microgen



ENATEC



Whispergen



Disenco



Energetix



Ceres Power - Fuel Stack only



Accumentrics

Key Messages

- Potentially disruptive technology.
- Potential to penetrate boiler market in the next five years.
- Growing micro-CHP engagement between European boiler manufacturers and utilities.
- It is on the point of major deployment.
- Architects and housing developers need to be aware of micro-CHP technologies – generally more cost effective than solar energy at the moment.

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