



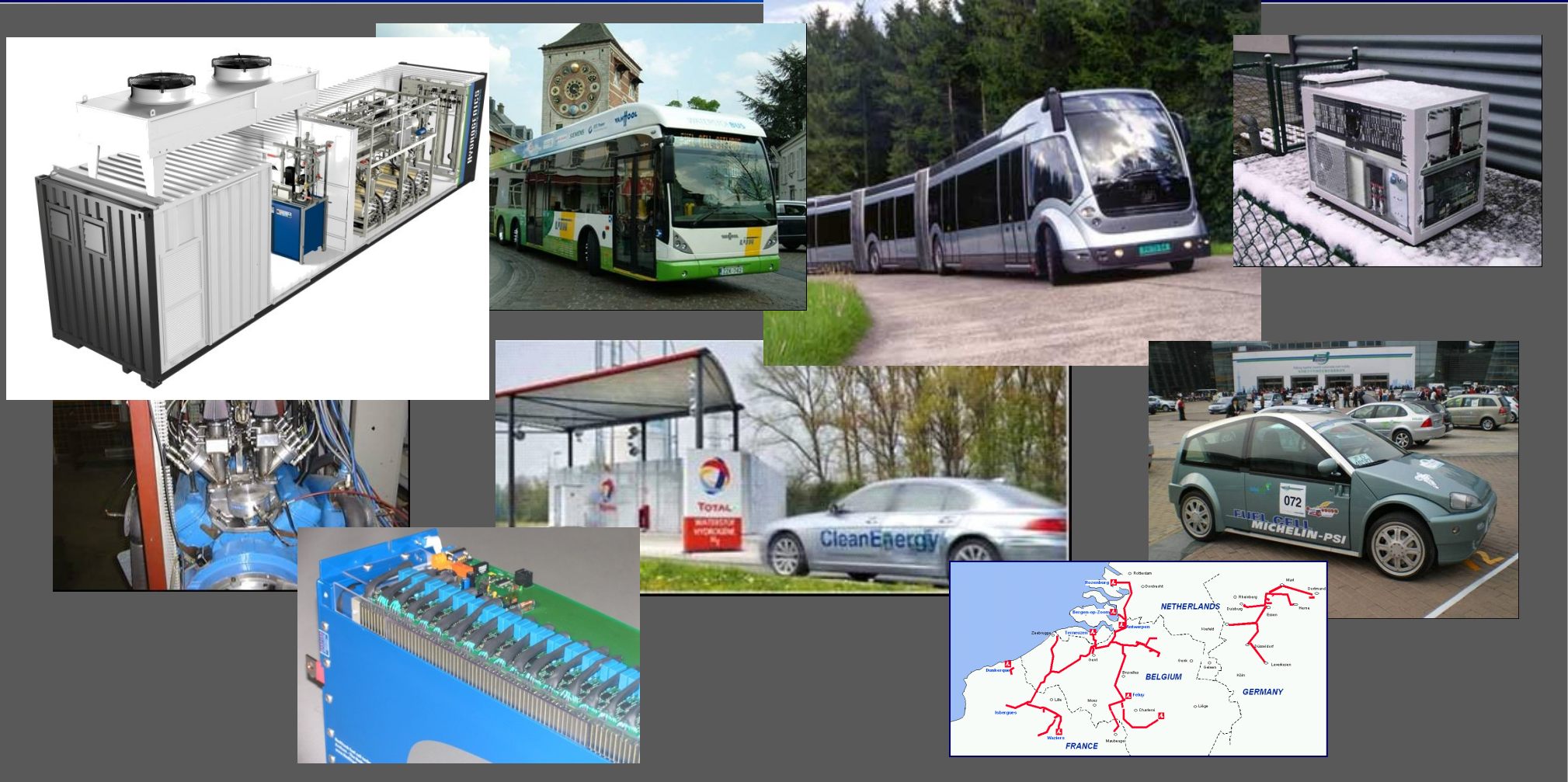
Early market demonstrations on hydrogen for the region Flanders (Belgium)-South-Netherlands

WaterstofNet vzw
Campus Blairon, 711
B-2300 Turnhout
Belgium

Knowledge of regional players



Knowledge of hydrogen and fuel cells



Project focus



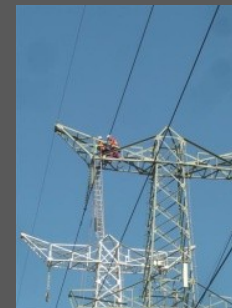
renewable energy



Electricity

Electricity

Grid



hydrogen

Transport



Logistics



Marine

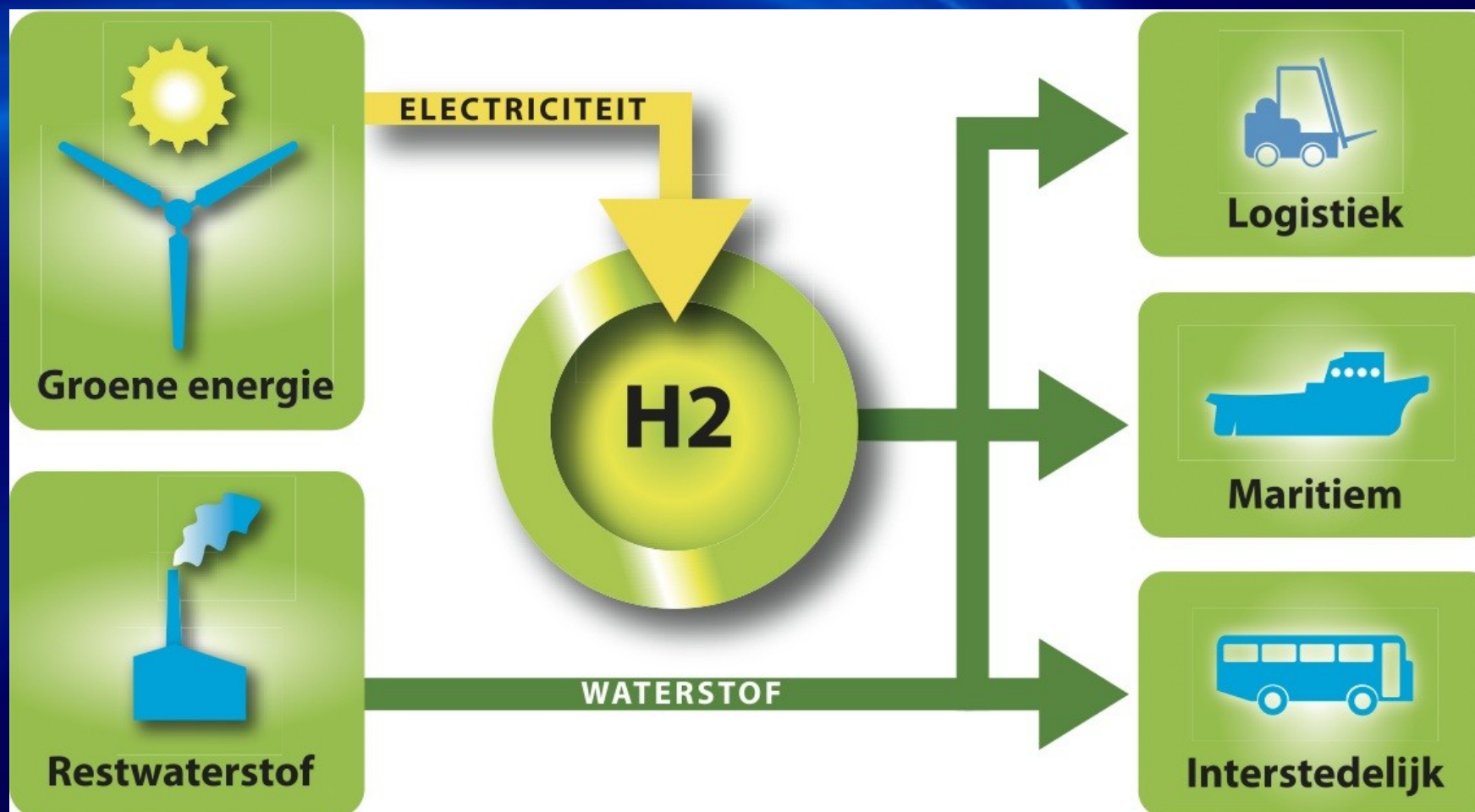


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waste hydrogen

Project focus



WaterstofNet and WaterstofRegio project (EU-project Interreg IV)



- Period: 1/6/2009 - 31/5/2012
- Budget: 14,1 Meuro (Flanders, Netherlands, Interreg, Industry)

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Goals of the WaterstofRegio project



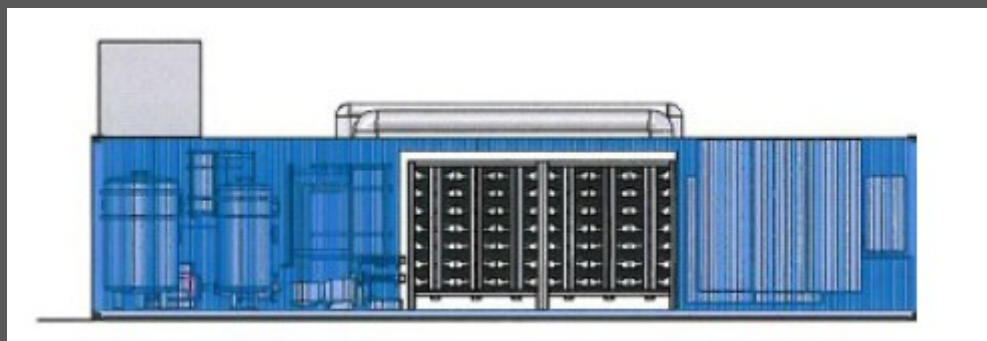
- 1 MW power plant on residual hydrogen (under construction)
- 2 Relocatable hydrogen fuelling stations (1st uc 2nd call open)
- Logistic applications on hydrogen (call open)
- Maritime applications on hydrogen (under construction)
- Intercity transport application on hydrogen (call soon available)
- Hydrogen production by photo-elektrolysis (1 m²) (under construction)
- Roll-out scenario for hydrogen infrastructure (ongoing)
- Education/training program (under construction)

How to cooperate



- Call open for subscribers (companies and/or consortia)
 - Aanbestedingskalender (NL)
 - Bulletin der aanbestedingen (B)
 - Website WaterstofNet, NWV, VSWB, Powerlink,...
- Selection of subscribers conform criteria
 - Evaluation (references, quality system, ...)
- Request for proposal
 - (construction, testing platform 500h, ...)
 - founding % and max founding budget announced
- Evaluation of proposals
- Purchase agreement
- Building, permitting, testing, evaluation, ...
- Reporting

Q1 1MW powerplant at Solvay



- Nedstack BV (FC system supplier)
- Solvicore (FC core components = JV Solvay + Umicore)
- Solvin (hydrogen supply and purchase of electrical power)
- Solvay is plant owner

1MW powerplant at Solvay



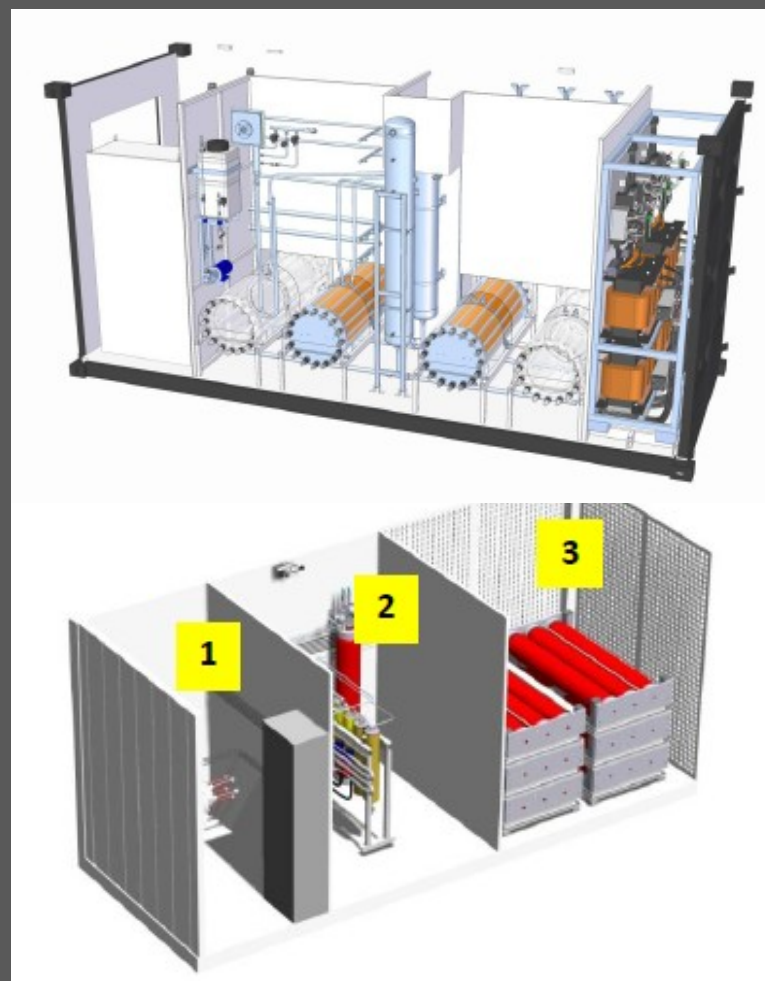
- 14 modules of 12 stacks = 168 stacks
- 168 stacks x 75 cells/stack = 12,600 MEA's
- 700 V DC x 130 A nominal power/module
- 750 Nm³/h Hydrogen at 100 - 200 mbarg
- 500 T/y residual hydrogen used
- Output: 1 MW x 400 VAC



Q3 Fuelling Station



- Hystat electrolyser 30Nm³/h
- Ionic compressor
- 450 barg HP storage
- 350 barg HP dispensing
- Containerized equipment 2x20ft
- Relocatable station



Q4 Maritime applications



Vennekens Scheepswerf
Tenderboot

Unitron
WECO635

Unitron
Hydrogen Experience

Boot

Lengte

Breedte

draft

aantal personen

autonomie

Motor

aandrijving

inhoud

compressieverhouding

brandstof

vermogen (kW)

Always looking for



- Cooperation on additional hydrogen/fuel cell projects:
 - Technology development
 - Demonstration projects
- Cooperation with other regions in Europe (HYRAMP)
 - Regarding hydrogen and fuel cells

Questions...



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