

RWE INNOGY VENTURE CAPITAL

» Through our investments in carbon neutral, centralised and decentralised energy generation and storage we are driving renewable energy technologies in Europe. «

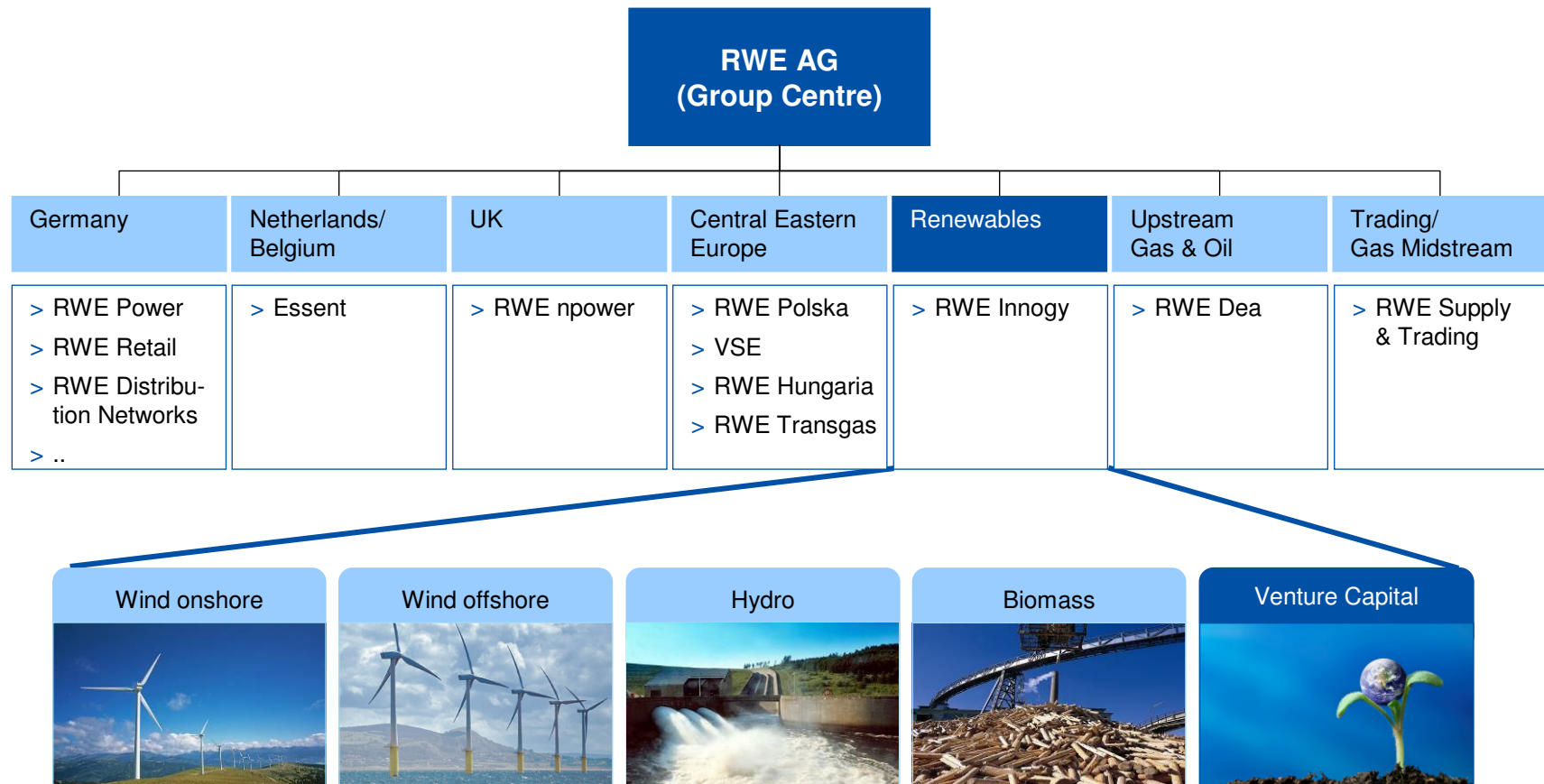


RWE

The energy to lead

RWE Group

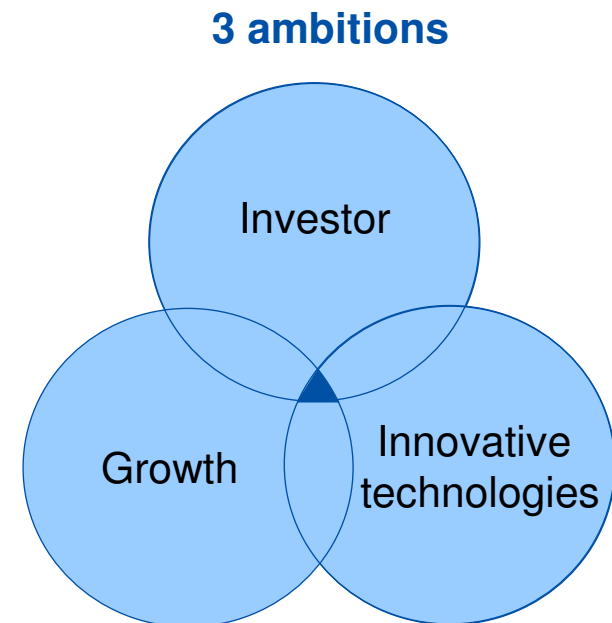
All renewable activities and competencies across RWE Group are pooled within RWE Innogy



RWE Innogy Venture Capital

We enable new technologies and future growth

- > We create future growth opportunities for RWE
 - New renewable technologies will be more than wind
 - New business models will address customer needs
 - New market segments will change renewable energy generation
- > We are bridging the 'scale gap' between RWE and emerging businesses of potential interest
- > We invest in and manage a portfolio of companies to deliver financial return



Our Strengths

We act as reliable partner for the management of our portfolio companies, encouraging their success

Technological Expertise

- > Close ties with our operational units
- > Access to in-depth technological expertise
- > Support for the development of pilot plants
- > Assessing the potential of new technologies for mass production and application



Professional Support

- > Provide financial and technological support
- > Provide management know-how in strategy, organisation & processes for portfolio companies



Strong Network

- Synergetic link between our Venture Capital investments and our network of experts
- > RWE internal e.g. R&D, OpCos
 - > In cooperation with external scientific institutions
 - > Top tier European Venture Capital companies






Investment Team

We have established an experienced international team with strong skills

- > Team of international experienced experts with diverse backgrounds in VC investment, portfolio management and management consulting:
 - > Many years of relevant experience in
 - > Entrepreneurship
 - > Finance
 - > Management consulting
 - > Portfolio management and risk controlling
 - > Renewable technology
- > Backed by expertise within RWE Group as needed

Investment Committee

Our Investment Committee guarantees fast decisions, entrepreneurial thinking and relevant networks

	Prof. Dr. Fritz Vahrenholt CEO RWE Innogy 	Dr. Hans Bunting CFO RWE Innogy 	Paul Coffey COO RWE Innogy 
	<ul style="list-style-type: none"> > Hydro > Biomass > Venture Capital > HR > Communication 	<ul style="list-style-type: none"> > Finance > Legal > Tax > M&A > IT 	<ul style="list-style-type: none"> > Wind Offshore > Wind Onshore > Technical Services > Operational Safety > Commercial
Education	<ul style="list-style-type: none"> > Degree in chemistry > Doctorate in chemistry (both University of Münster) 	<ul style="list-style-type: none"> > Degree in business administration > Doctorate in business administration (both University of Bochum) 	<ul style="list-style-type: none"> > Degrees in business and finance (University of Northumbria at Newcastle and University of Sunderland)
Career Milestones	<ul style="list-style-type: none"> > 2001 – 08 CEO REpower Systems AG, Hamburg > 1998 – 01 Member of the Board of Directors of Deutsche Shell AG > 1991 – 97 Senator and Principal of the City of Hamburg Environmental Ministry > 1984 – 90 Deputy Minister City of Hamburg Environmental Ministry > 1981 – 84 Head of Department of Environmental Policy, Waste Management and Air Pollution Control at the Hessian Ministry of Regional Development, Environment, Agriculture and Forestry 	<ul style="list-style-type: none"> > 2004 – 08 Head of risk management RWE AG > 2000 – 04 RWE Trading GmbH, various management positions in finance and risk controlling > 1995 – 00 RWE Energie AG, various positions in finance and risk controlling > 1990 – 95 Ruhr-University Bochum, research associate 	<ul style="list-style-type: none"> > 2008 – 09 MD Operations & Technology RWE npower Plc > 2007 – 08 MD npower Business RWE npower > 2005 – 07 Director of Commercial Asset Management RWE npower > 2003 – 05 Head of Commercial Development, RWE Trading GmbH > 2002 – 03 Various management positions at Innogy Plc in marketing and asset management > 1989 – 2002 Various positions at Northern Electric Plc

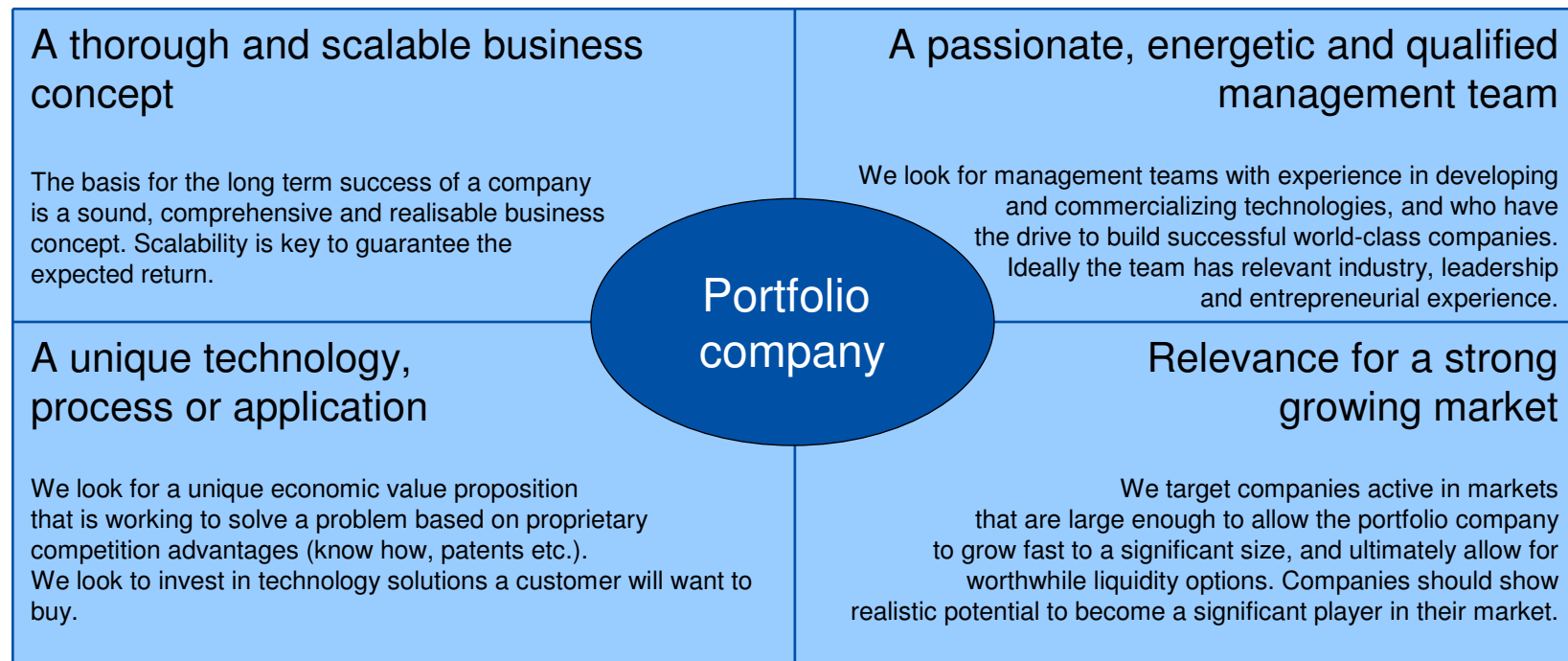
Investment Strategy and Focus

We build a significant portfolio of investments in European technology companies

Portfolio & Sector	> Investing in innovative European companies within emerging renewable technologies
Support	> Portfolio companies receive financial, technological & management support
Exit focus	> Exit options essential for investment
Transaction size	> Minority investments up to 10 m€ per company
Phase	> Funding of seed to growth/pre-IPO phases
Time horizon	> Portfolio approach, up to 10 years investment
Fund size	> Investments in the triple-digit millions are planned
Investment modus	> Lead and co-investments > Open for syndication with VCs and organisations

Investment Criteria

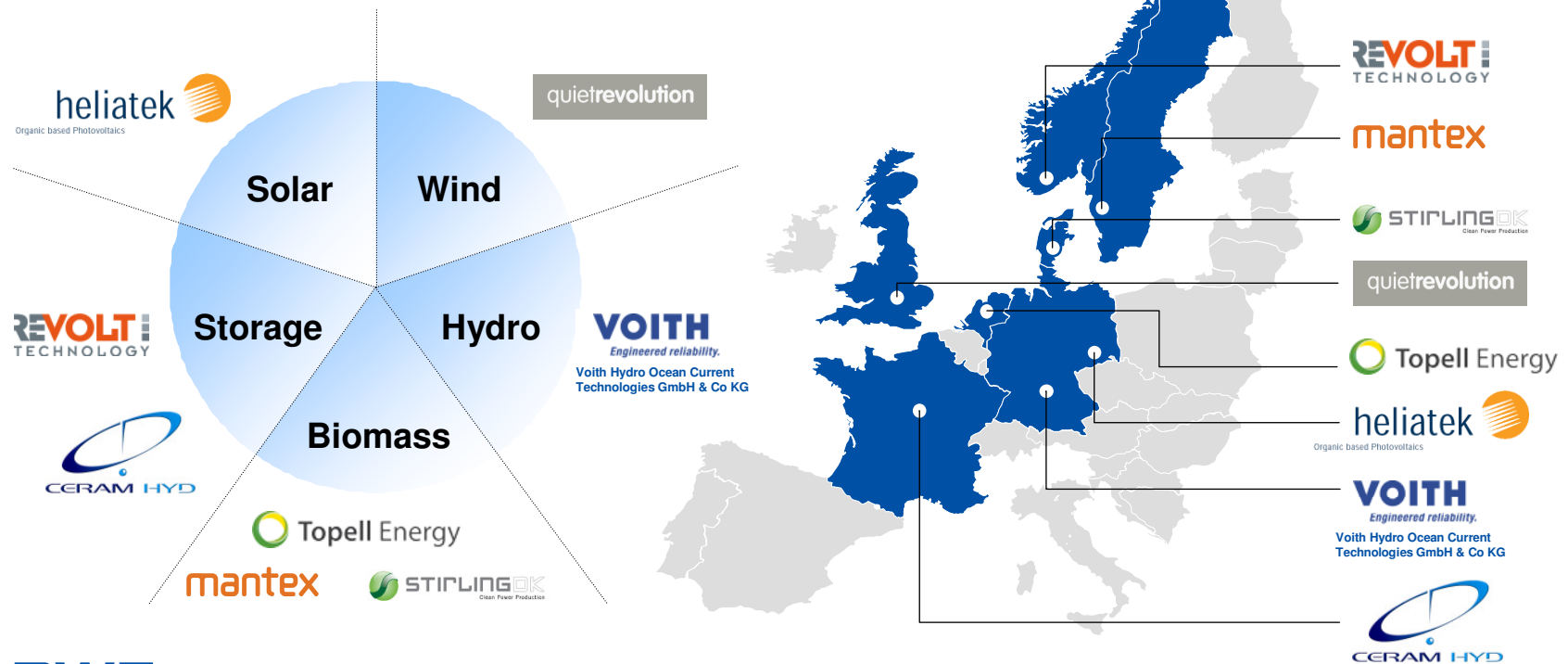
Our investment decisions are based on the fulfillment of key selection criteria



Our Portfolio

Renewable – diversified – European

- > 8 companies
- > more than 50 m€ committed capital
- > diversified in terms of technologies, countries and stages



Portfolio Companies

Topell Energy

Size of Investment	> Single digit m€ amount
Equity stake	> 39 % minority stake
Country	> Netherlands



Technology	<ul style="list-style-type: none"> > Torrefaction & pelletisation to produce pellets for co-firing homogenous biomass in hard coal plants > Proven reactor technology with continuous production line and short reaction time
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Market	<ul style="list-style-type: none"> > Strong growth in pellet market expected > Strong growth in biomass co-firing market expected
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Product	<ul style="list-style-type: none"> > Biocoal pellets: <ul style="list-style-type: none"> - solving biomass transport problem - solving biomass/food competition - offering homogenous product characteristic - higher energy density > Demo reactor up and running
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quietrevolution

> Single digit m€ amount
> Minority stake
> UK



<ul style="list-style-type: none"> > Small vertical axis wind turbine > Triple-helix-shaped; permanent magnet; no gearbox > Low O&M-costs

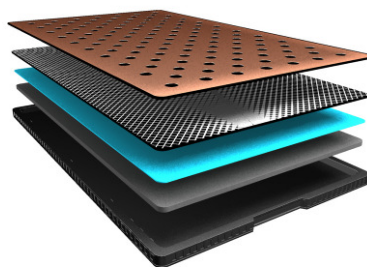
<ul style="list-style-type: none"> > Growing market for wind based decentral energy generation expected > Targets residential and SME customers > High sales volume due to easy grid access and permission to install in UK expected
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<ul style="list-style-type: none"> > Flagship product: 6 kW QR5 > Very quiet & aesthetic > Designed to optimise electricity generation from turbulent winds close to buildings > More than 100 units installed in UK, 2 in Germany
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Portfolio Companies



Size of Investment	> Single digit m€ amount
Equity stake	> Minority stake
Country	> Norway/Switzerland/Ireland
Technology	<ul style="list-style-type: none"> > Revolutionary rechargeable Zinc-air battery technology > High energy density > Safe behaviour; no flammable/toxic materials
Market	<ul style="list-style-type: none"> > Batteries in all consumer markets > Up-scaling for stationary renewable utility applications > Option for E-Mobility applications
Product	<ul style="list-style-type: none"> > Environmental friendliness/non toxic > Cost efficient due to use of abundant zinc > Primary zinc-air coin cell mass production start in 2010 > Major application in hearing aids; secondary zinc-air coin and prismatic cell as next product line



VOITH

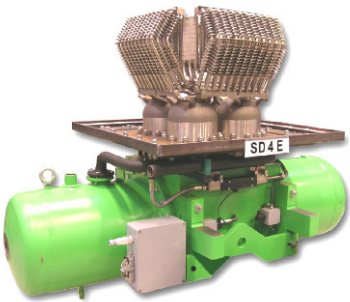

Engineered reliability.

Voith Hydro Ocean Current Technologies GmbH & Co KG

> Single digit m€ amount	
> 20 % minority stake	
> Germany	
Technology	<ul style="list-style-type: none"> > Robust and reliable design: <ul style="list-style-type: none"> – No gearbox/ no blade pitch/ no adjustment to flow direction – Sea water lubricated bearings
Market	<ul style="list-style-type: none"> > Utility scale worldwide market for tidal stream electricity production expected > Predictable renewable electricity generation
Product	<ul style="list-style-type: none"> > 3 blade tidal stream turbine of 1MW nominal capacity > Integrated solution incl. maintenance concept without the need for special ships > Environmental-friendly due to absence of oils > First 110 kW prototype in 2009; commercially sized turbines in 2011/2012

Portfolio Companies

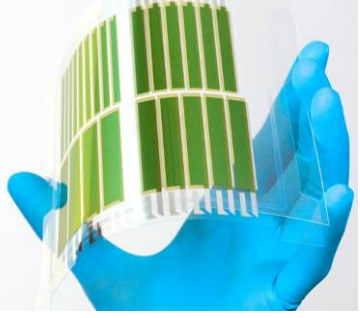


Size of Investment	<ul style="list-style-type: none"> > Single digit m€ amount 		<ul style="list-style-type: none"> > Single digit m€ amount 	
Equity stake	<ul style="list-style-type: none"> > 29 % minority stake 		<ul style="list-style-type: none"> > 30 % minority stake 	
Country	<ul style="list-style-type: none"> > Denmark 		<ul style="list-style-type: none"> > Sweden 	
Technology	<ul style="list-style-type: none"> > Small scale biomass CHP system based on Stirling engines > Designed to use solid low-quality and low-cost biofuel by gasification or direct combustion 		<ul style="list-style-type: none"> > Innovative electro-magnetic scanning technology > High precision determination of moisture, ash content and impurities in biomass > Continuous measuring of biomass on conveyor belt 	
Market	<ul style="list-style-type: none"> > Decentral systems using solid biomass for generating electricity and heat > SMEs, hospitals, large office buildings etc. 		<ul style="list-style-type: none"> > Need for accurate data on biomass properties > Process optimisation to achieve higher energy yield for biomass plants > Increase efficiency in pulp, paper and other industries 	
Product	<ul style="list-style-type: none"> > Based on Stirling engine units of 35 kW(e) > Electric efficiency up to about 20%, overall efficiency up to 90% > Designed for low operational cost and high reliability by using external combustion > First units in operation at customer sites 		<ul style="list-style-type: none"> > Device for moisture measurement on single samples available > Fast and reliable measurement without no need for external calibration > In process analyzer in development, joint R&D projects with large companies 	

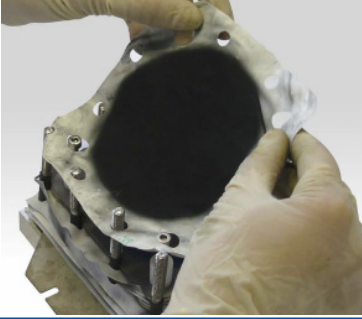
Portfolio Companies



Organic based Photovoltaics

Size of Investment	> Single digit m€ amount	
Equity stake	> Minority stake	
Country	> Germany	
Technology	<ul style="list-style-type: none"> > Photovoltaic cells made of small organic molecules > Evaporation and deposition of photoactive materials on PET foils at low temperatures > Harvesting most of the sun spectrum by tandem cells 	
Market	<ul style="list-style-type: none"> > Strong growth expected for low cost PV > Raising interest in new application areas for PV like building integration 	
Product	<ul style="list-style-type: none"> > Heliatek's solar cells are produced of non toxic materials and will be flexible and lightweight > Current lab cells proved world class efficiencies of 6% > First modules on 30 cm broad substrate for mobile applications later on modules for architectural solutions 	



Size of Investment	> Single digit m€ amount	
Equity stake	> Minority stake	
Country	> France	
Technology	<ul style="list-style-type: none"> > Key technology for usage of renewable energy > Novel membrane technology, based on a unique proton activation process with ceramics 	
Market	<ul style="list-style-type: none"> > Decentralized high purity hydrogen production > CO2 reduction by replacing potentially methane steam reforming as production technology > Future markets: Higher electricity demand in line with higher availability of renewable generation 	
Product	<ul style="list-style-type: none"> > Ceramic membrane for electrolyzers to produce high purity hydrogen > Low cost membrane based on abundant materials; significant cost reduction in hydrogen production based on electrolysis 	

RWE Innogy Venture Capital

RWE Innogy GmbH
Karolingerstr. 94
45141 Essen
Germany

ventures@rwe.com

www.rweinnogy.com

