

### 3. St. Gallen Forum for Management of Renewable Energies

## » Innovation and renewable technology – a view from an early stage investor «

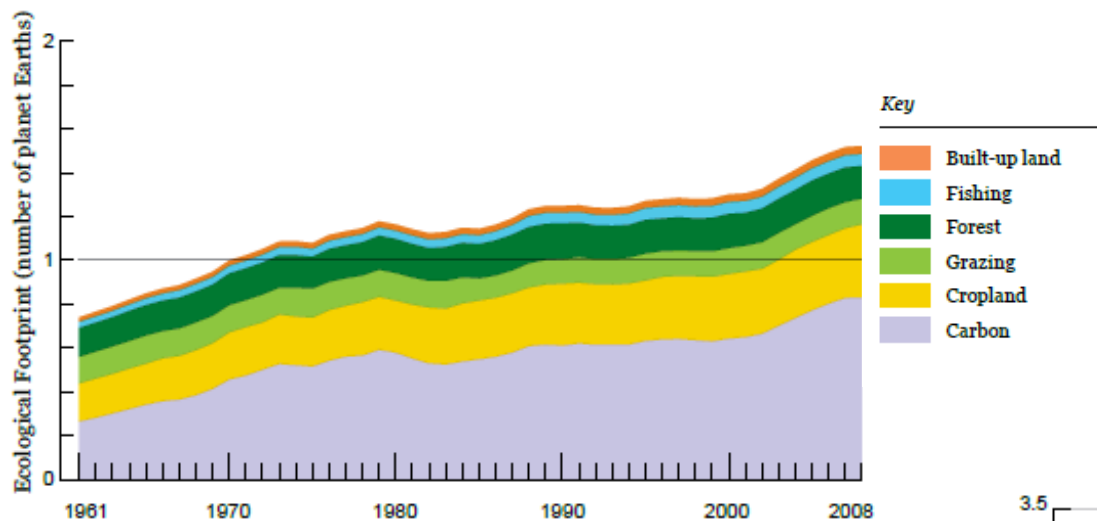
Crispin Leick



25/05/2012

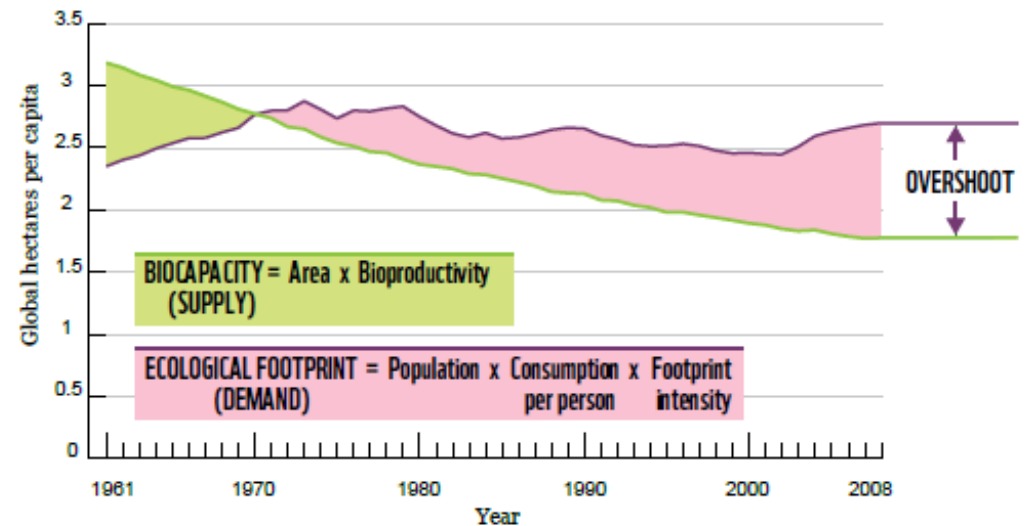


# WWF Ecological Footprint points to carbon cycle as the major driver for a sustainable future



„...it would take 1.5 years for the Earth to fully regenerate the renewable resources that people used in one year.“

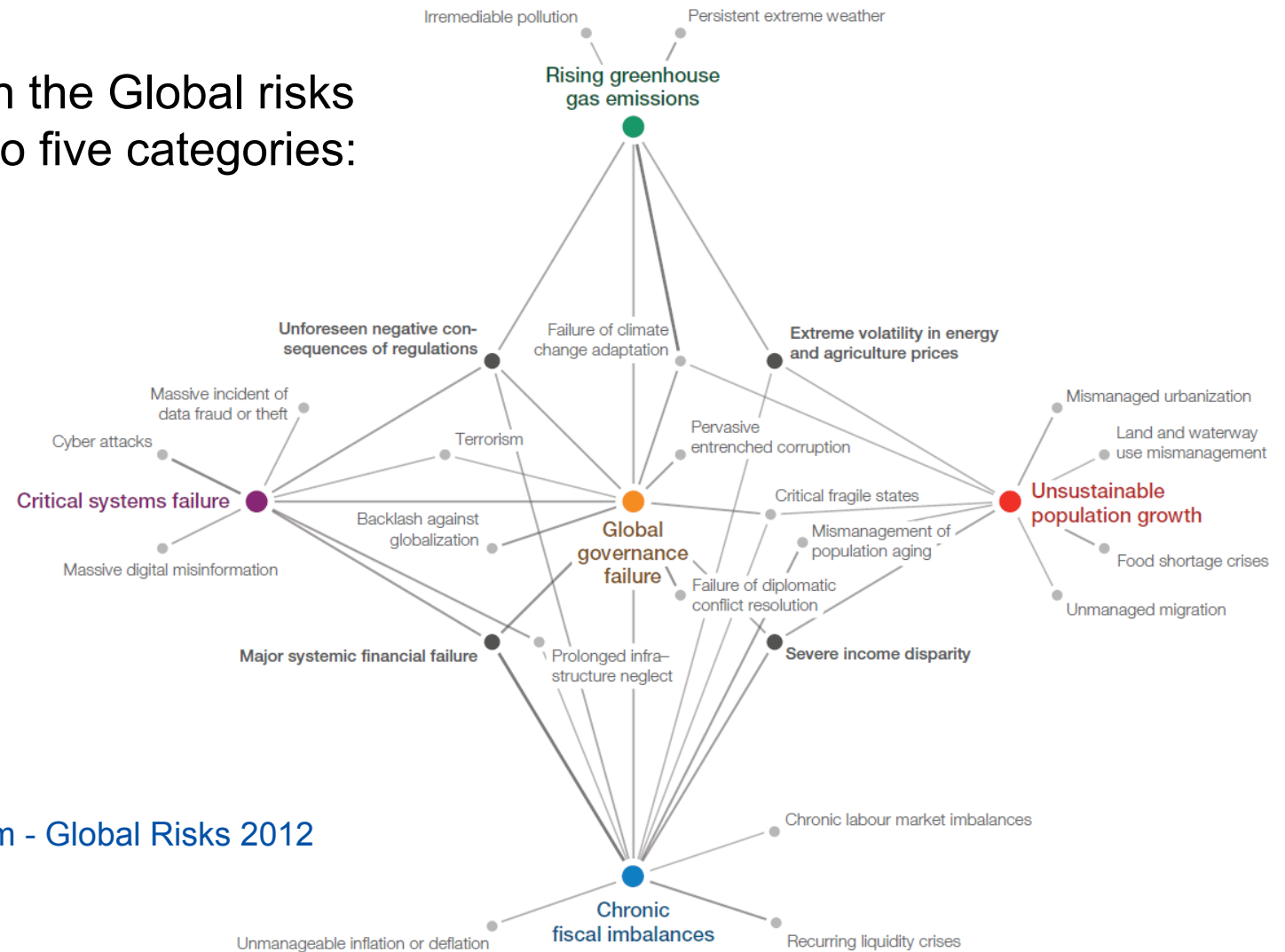
„Carbon represents the amount of forest land that could sequester CO2 emissions from the burning of fossil fuels...“



# Risk management is key on a worldwide scale as much as for early stage investments

The 50 global risks in the Global risks report are divided into five categories:

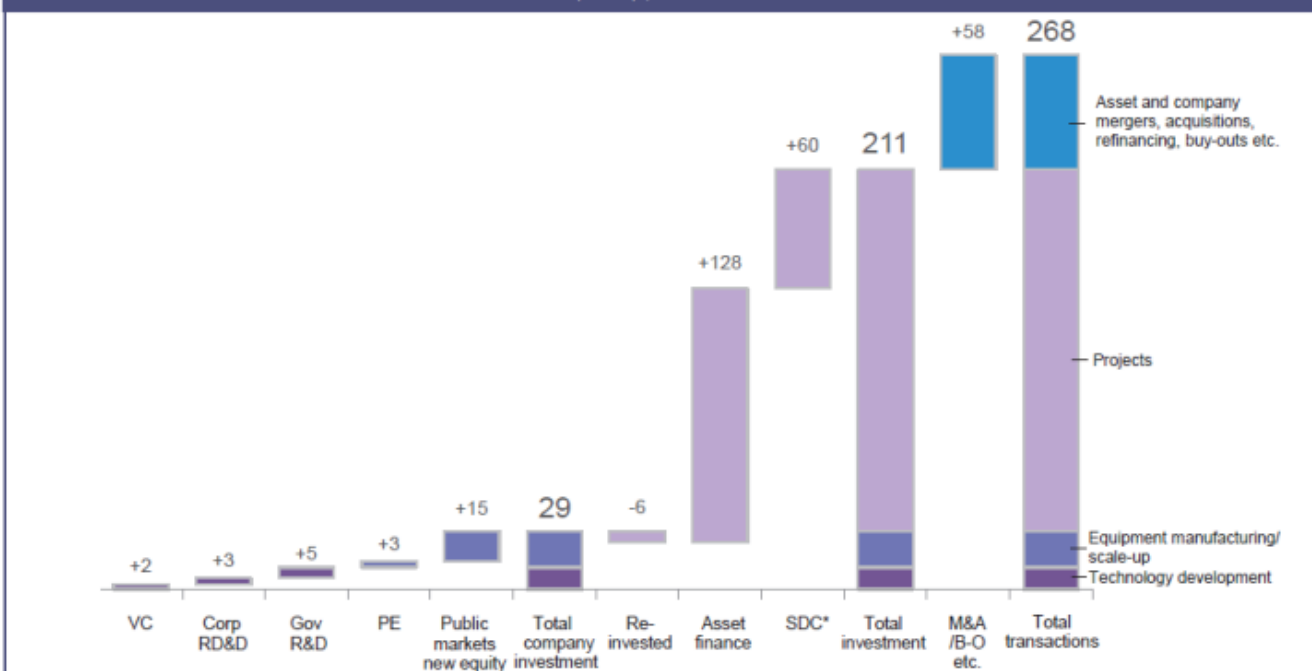
- > economic
- > environmental
- > geopolitical
- > societal and
- > technological.



Source: World Economic Forum - Global Risks 2012

# Strong fundamentals are driving significant investment trend in renewable energy solutions

FIGURE 2: GLOBAL TRANSACTIONS IN RENEWABLE ENERGY, 2010, \$BN



SDC = small distributed capacity. Total values include estimates for undisclosed deals. \* data based on estimates from various industry sources

Source: Bloomberg New Energy Finance, UNEP

## Drivers:

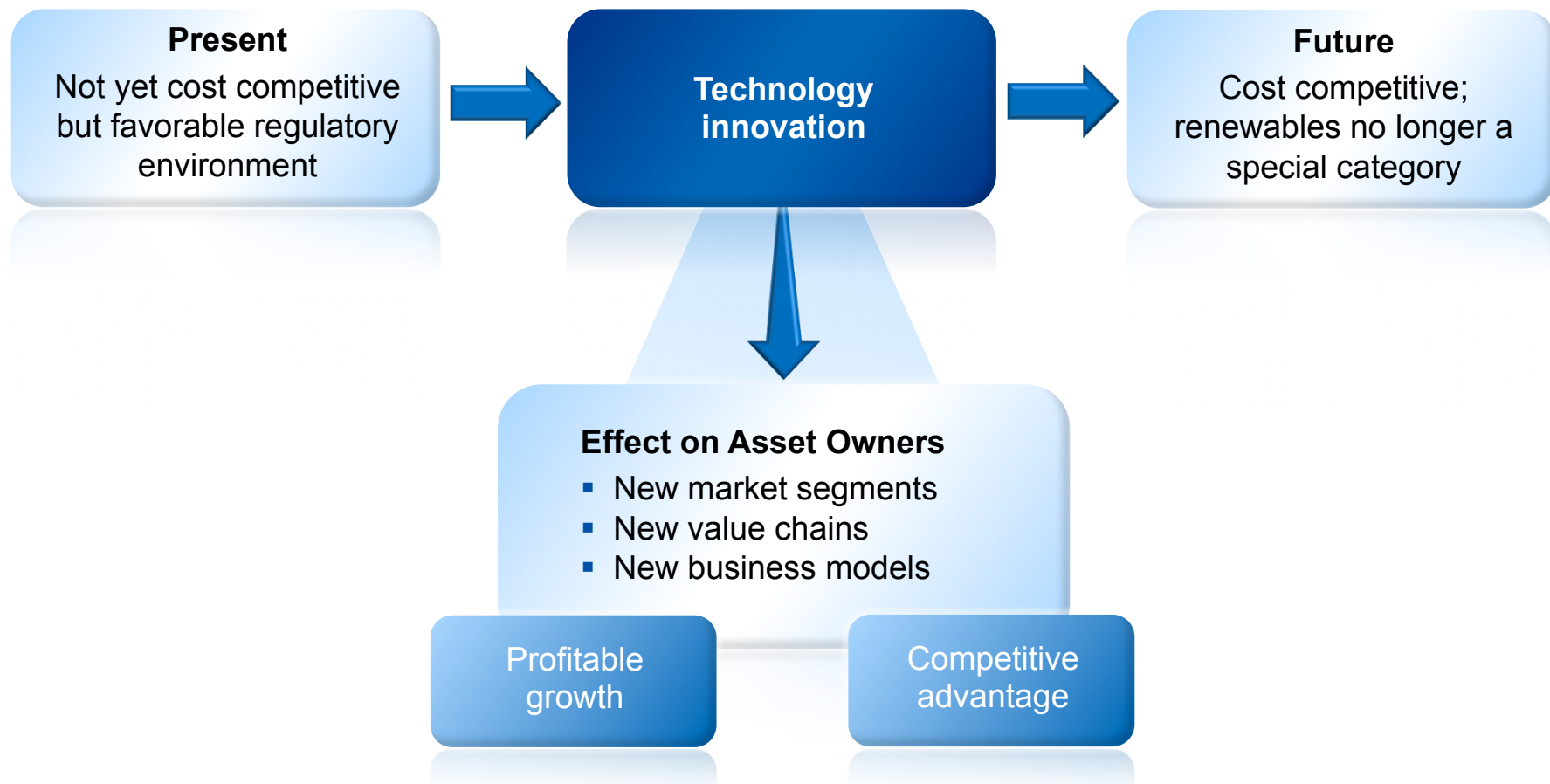
- Growing energy demand
- Requirements to ensure security of supply
- Reduction of carbon intensity

FIGURE 3: GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2011 DATA TABLE. \$BN

Category	Year	2004	2005	2006	2007	2008	2009	2010	2009-10	2004-10
		\$bn	\$bn	\$bn	\$bn	\$bn	\$bn	\$bn	Growth %	CAGR %
1 Total Investment										
1.1 New Investment		33	57	90	129	159	160	211	32%	36%

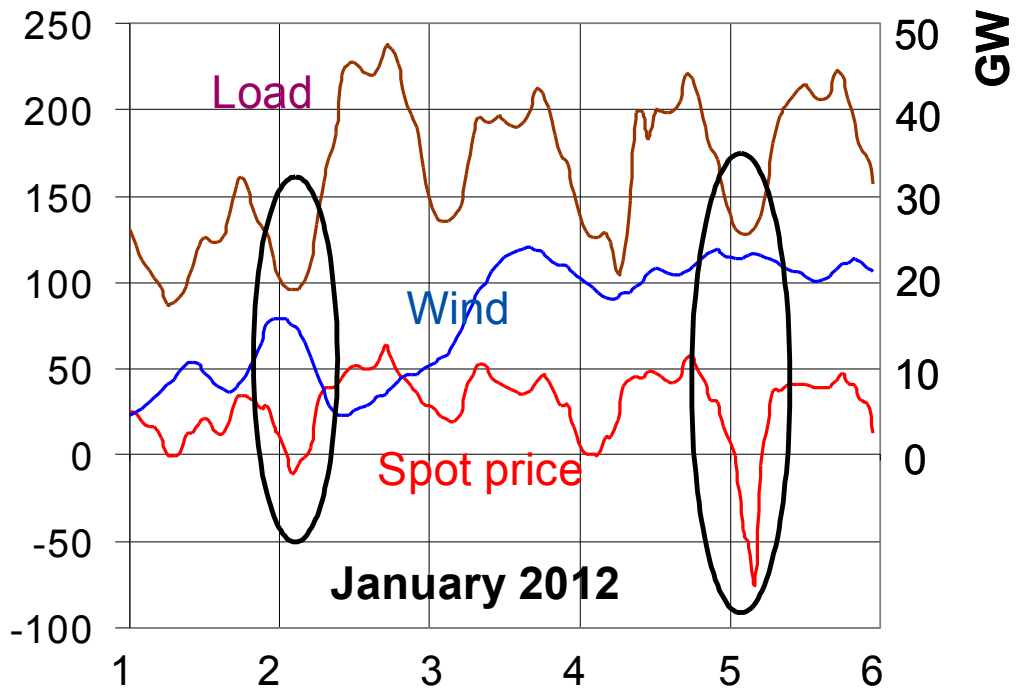
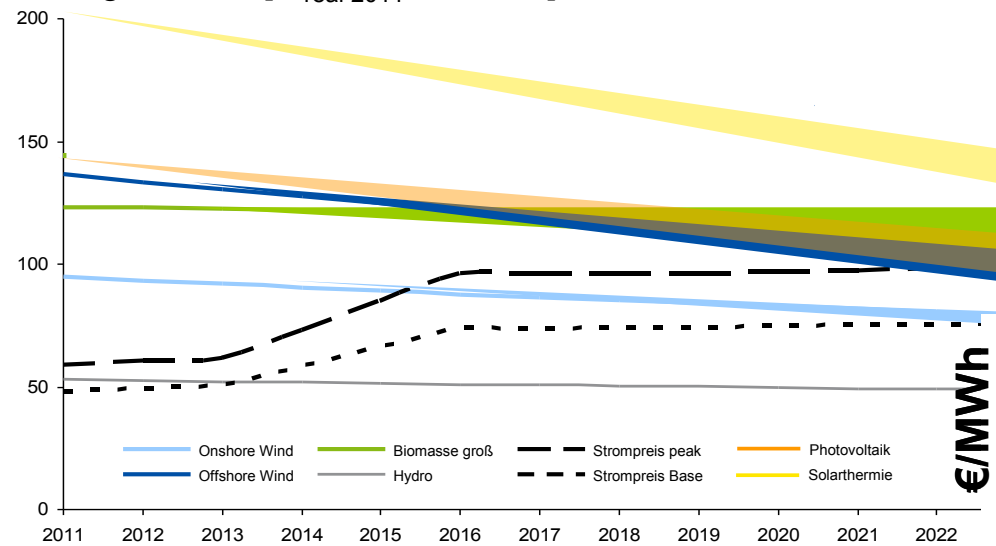
Source: UNEP - GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2011

# Technology innovation is the key to making renewable energy solutions competitive



# Fast renewable generation capacity growth defines needs

Average LCOE [€<sub>real 2011</sub> / MWhel]\*



- > Cost competitiveness needs a closer look
- > Intermittency - Supply / Demand imbalance

# Timing is part of the equation

## RENIXX index – 30 global leaders in Renewable Energy



- > Valuations at 10 year low
- > Technology investment cases show strong cyclicalty

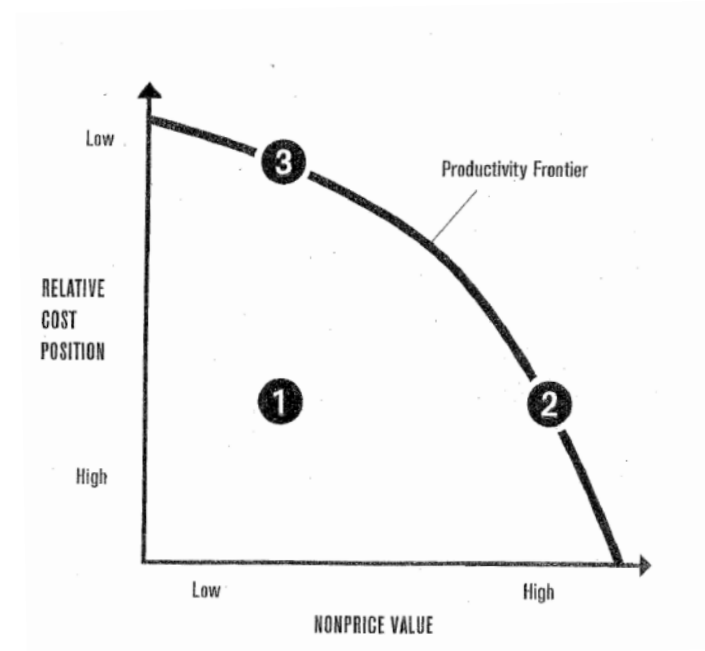
Source  
RENIXX® - Börsenkurse Online Regenerative Energiewirtschaft  
Internationales Wirtschaftsforum Regenerative Energien (IWR)

# Does academia help ?

## Decision tree for disruptive innovation



## The productivity frontier



Source: Michael Raynor – The Innovator’s Manifesto (2011)



# Portfolio Companies of Innogy Venture Capital



AIREC

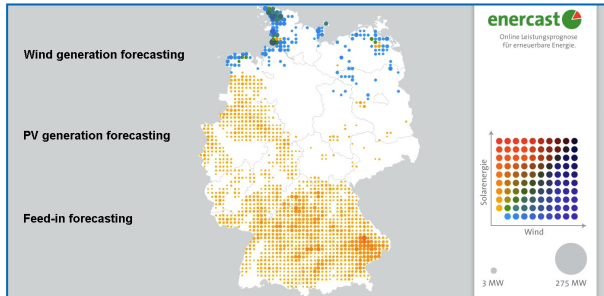
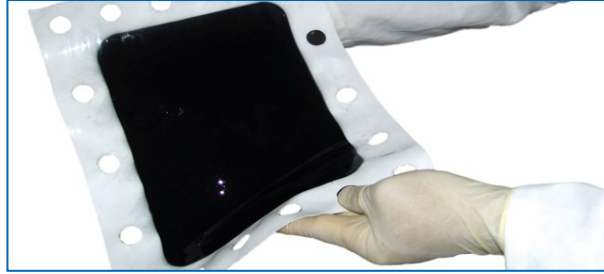


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