How ETH-Domain contributes to Sustainable Development of Civil Society

From 2000 Watt Society to Eco-Energy Lifestyle

ISCN-GULF Conference
11th June 2009
Roland Stulz
Novatlantis as a Promotor of Transdisciplinary Science

Research

Pioneer Projects

Market

- Public Authorities
- Investors
- Media
- Politicians

Transfer

Research Results

Dialogue and Implementation

Pilot-Projects

Industry

- ETH Board
- CCEM
- CCES
- EMPA
- PSI
- FHBB
- Z:W
- EAWAG
- WSL
Fair Redistribution of Energy Resources: The 2000 Watt Society

<table>
<thead>
<tr>
<th></th>
<th>Watt per Capita</th>
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<tbody>
<tr>
<td>World</td>
<td>2000</td>
</tr>
<tr>
<td>Europe</td>
<td>12000</td>
</tr>
<tr>
<td>USA</td>
<td>12000</td>
</tr>
<tr>
<td>India</td>
<td>2000</td>
</tr>
<tr>
<td>China</td>
<td>2000</td>
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</tbody>
</table>
An Ambitious Vision: 2000-Watt-Society

- Non Fossil
- Fossil
- Embodied Energy

**Watt per Capita**

<table>
<thead>
<tr>
<th>Year</th>
<th>Non Fossil</th>
<th>Fossil</th>
<th>Embodied Energy</th>
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<tr>
<td>1900</td>
<td></td>
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<tr>
<td>1950</td>
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<td>2000</td>
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<td>500</td>
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<td>2050</td>
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<td>2000</td>
<td></td>
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<td>2100</td>
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<td>500</td>
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<tr>
<td>2150</td>
<td></td>
<td>1000</td>
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</tbody>
</table>

1to CO2
Factor Five Efficiency is Feasible

**SUV**
10 litres/100km (Fossil Fuel)

**Existing Buildings**
10 litres oil/m²

**Fossil Energy**
(oil, gas, coal)

**"Waste Society"**
350 kg/year*person

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2005

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**Light Weight Mobility**
2 litres/100km

**Green Buildings**
2 litres oil/m²

**Renewable Energy**
sun fuels

**Closed Resource Cycles**

2050
Mission

The Novatlantis knowledge transfer program is based on:

- Design of an appropriate, ambitious energy vision and creation of landmarks
- Action on four levels: technical, economic, social (training), political
- Considering life cycle cost, not only investment cost
- Choosing best available technology: 'Negawatt' instead of Megawatt
ETH Contribution to Civil Society: Partnerships for Sustainability

**Basel**
- 2000-Watt Novartis Campus
- Hy-Light H2 concept car
- CLEVER Low Emission Biogas car

**Geneva**
- Sustainable Neighbourhoods
- Health and Happiness

**Zurich**
- Sustainable ETH Science City
- Zero Carbon EAWAG Headquarters
- Zero Carbon Hospital
- Worlds cleanest Diesel Truck Engine
- Erlenmatt 2000-Watt Housing

![Map of Switzerland with points of interest](image)
Push & Pull Strategy

**Eth Domain**
- **Push**
  - innovation
  - expertise
  - products

- **Pull**
  - opportunities
  - needs
  - trends

**Implementation**
- communication
- motivation
- PPP
- landmarks

**Energie Schweiz**

**Cities / Cantons**

**Business**
- pull
  - analysis
  - seminars
  - networking
  - policy marking
Pilot Region Basel: Bottom-Up Process

- Transportation Laboratory
- Landmark Buildings
- Zero Energy Renovation Award (Minergie-P)
- Novatlantis Building Construction Forum
- Sustainable Neighborhood Forum
- Public Private Partnerships
Partner Region Zürich: Top-Down Process

City Mayor

Program Management LSP4
  Strategic Partner
  Steering Committee
  Mayor + Directors

Communication

Directors Panel LSP4
  M. Büser (Vorsitz)
  GUD
  LeiterInnen Themenfelder
  Vertretung der strategischen Partner

Administration, Controlling
  B. von Allmen

Taskforce 1
  Formulierung Energiestrategie
  Leitung: B. Bébie
  DIB

Taskforce 2
  Umsetzung Energievision
  Leitung: T. Püntener
  GUD

Taskforce 3
  Nachhaltiges Planen/Bauen/Bewirtschaften
  Leitung: H. Gugerli
  HBD

Taskforce 4
  Stadtverträgliche Mobilität
  Leitung: R. Ott
  TED

Taskforce 5
  Umwelt- und gesundheitsbewusstes Handeln
  Leitung: H. Hoffmann
  GUD

Taskforce 6
  Kooperationen
  Leitung: B. Hohl
  GUD
LSP4 Projects in Zürich

- Strategy Paper 2000 Watt-Gesellschaft
- Action Plans
  - Energy Efficiency
  - Renewable Energies
  - Efficient Electricity
- Energy Coaching

- Landmark Buildings
LSP4 Projects in Zürich

- Public Procurement
- Lifestyle Scenarios
- Communication Handbook
- "Züricher 2000-Watt-Days"
- "Sportlich zum Sport"
- LIFFair
- Eco-Businessplan for SME
- Corporate Partnerships
  "Sustainable Zürich"

Public Vote November 2008:
2000-Watt-Society integrated in the Town Constitution

⇒ 77% voted YES
Future Development of the 2000 Watt Society

2000-2009

Novatlantis

Push+Pull

PPP

2000 WS

2010-20...

Novatlantis

Communication

P+P

Networking

Eco-Energy

2000 WS

1t CO2

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Lifestyle Scenarios: Galileo 2

Pioneer Family, 2 Children, Suburb

Single, 28y, City

3000 Watt

9000 Watt
Experience shows that Sustainable Development

- stimulates innovation
- offers market leadership opportunities for industry and service providers
- reduces dependency of imported resources

Thank you! www.novatlantis.ch
www.novatlantis.ch