Agenda

- Dutch Policy on Energy Innovation
- A Dashbord for Portfolio Management
To realize Sustainable and Economic impact

Indicators

<table>
<thead>
<tr>
<th>Sustainable</th>
<th>Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Energy Production</td>
<td>Turnover</td>
</tr>
<tr>
<td>Installed Capacity</td>
<td>Export</td>
</tr>
<tr>
<td>Energy Reduction</td>
<td>Employment</td>
</tr>
<tr>
<td>CO₂-reduction</td>
<td></td>
</tr>
</tbody>
</table>

Size = Total of Investments

Potential of CO₂-reduction

Big

Economic Potential Energy Sector

Less

Small

More
With International Top Publiek-Private Partners

For example: Off shore Wind
In new Innovation Institutions

Producten en diensten
- Virtuele infrastructuur
- Fysische infrastructuur
- Institutionele en sociale innovaties

Installatie
- Gebied
- Gebouw

Financiële en sociale innovaties

TKI Smart Grids

Programma voorstel Computational Sciences

TKI Wind op zee

TKI Solar Energy

TKI Energiebesparing in de gebouwde omgeving

TKI Bio-Energie

TKI Gas

Power-to-gas en gas-to-energy
- Gasrotondo 2.0
- Maatschappelijke inbedding
- Upstream
- Small scale LNG
- Groen gas

TKI Energiebesparing in de industrie

Samenwerking Topsector HTSM

Innovatie barrières
- Omzetting en scheiding
- Ontkrachten en drogen
- Proces- en systeemanalyse
- Utilities en controle

Samenwerking Topsector Chemie en cross-sectoraal thema Biobased Economy

Raakvlak Topsector Agrofood

Ondersteuning constructies
- Windcentrales
- Intern elektisch netwerk en aansluiting op hoogspanningsnet
- Transport installatie en logistiek
- Beheer en onderhoud
- Windpark ontwikkeling

Ondersteuning constructies

Raakvlak Topsector Water
On the Agenda of the TopTeam Energy

- Internationalisation
- A human Resource Agenda
- Demand-driven Innovation (institutions)
- Portfolio of Innovation Programs
To Develop New Components and Products
Agenda

• Dutch Policy on Energy Innovation
• A Dashbord for Portfolio Management
Portfolio Management

1. Identify potential value networks
2. Prioritize the most attractive value networks
3. Optimize the portfolio of Innovation Programs
4. Select the Innovation Programs
5. Staff the Programs
6. Execute and monitor the Programs

Selection of Innovation Programs (biennial)
Selection of Innovation Programs - Criteria

Contribution to the National Energy Agreement.

The parties to the Energy Agreement will strive to achieve the following objectives:
• a saving in final energy consumption averaging 1.5% annually. This is expected to be more than enough to comply with the relevant EU Energy Efficiency Directive;
• in this context, a 100 petajoule (PJ) saving in the country’s final energy consumption by 20201;
• an increase in the proportion of energy generated from renewable sources from 4.4% currently to 14% in 2020, in accordance with EU arrangements;
• a further increase in that proportion to 16% in 2023;
• at least 15,000 full-time jobs, a large proportion of which will be created in the next few years.

International positioning and reputation

Source: Expectations of Plan Bureaus, (inter)national Statistics and Energy Expert opinions

Number and Financing by private partners

Source: Expectations of Plan Bureaus, (inter)national Statistics and Energy Expert opinions
Selection of Innovation Programs - Portfolio

Discovery (TRL 1-3)  Development (TRL 4-6)  Demonstration (TRL 7)  Deployment (TRL 8-9)
Portfolio Management

1. Identify potential value networks
2. Prioritize the most attractive value networks
3. Optimize the portfolio of Innovation Programs
4. Select the Innovation Programs (biennial)
5. Staff the Programs
6. Execute and monitor the Programs

Monitoring the functioning of the Dutch Energy System (annual)

1. Map the innovation structure
2. Analyze the functioning
3. Review the functioning of the structure
4. Decide less/more Resources for Programs
5. Staff the Programs
6. Execute the Programs
Functioning of the Dutch Energy System - Actors

The right actors?
International reputation?
Role in value chain?

Regional clusters?

% private funding

Source: Public-Private financed project plans of RVO.NL, NOW and Knowledge Institutions
Functioning of the Dutch Energy System – Collaboration

Building up an innovation system?

Do we see changes in network characteristics?

For example: Network of BBE in 2012 and 2013

Source: Public-Private financed project plans of RVO.NL, NOW and Knowledge Institutions
Functioning of the Dutch Energy System - Technology

Enough variation?
Increase in Technology Readiness?

Accumulation in products?
Business case?

Stabilisation
Acceleration
Take-off

Source: Public-Private financed project plans of RVO.NL
Innovation Sensor
A Dashboard for Portfolio Management

Helping the TopTeam to decide on....

Doing the right things? Based on expectations of plan Bureaus and experts

Doing the things right? Based on facts and figures from projects

1. Identify potential value networks
2. Prioritize the most attractive value networks
3. Optimize the portfolio of Innovation Programs
4. Select the Innovation Programs
5. Staff the Programs
6. Execute and monitor the Programs

1. Map the innovation structure
2. Analyze the functioning
3. Review the functioning of the structure
4. Decide on less/more Resources for Programs
5. Staff the Programs
6. Execute the Programs

Helping the TopTeam to decide on institutional change to empower the new economy
Questions?

http://topsectorenergie.nl/english/organisation
http://english.rvo.nl

joost.koch@rvo.nl

H.J. (Joost) Koch
Senior advisor Quality, Monitoring and Evaluation
Concern Staf, RVO.NL
P.O Box 8242, 3503 RE Utrecht, The Netherlands
And PhD at the Utrecht University, the Netherlands