ATES Market Development in The Netherlands

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- Present status
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Development number of ATES projects in the Netherlands

![Line graph showing the development of ATES projects from 1988 to 2006. The graph indicates a steady increase in the number of projects, with a significant rise after 2000. Key years with specific numbers of projects are marked on the graph:

- 1988: 5
- 1990: 5
- 1992: 34
- 1994: 214
- 1996: 353
- 1998: 438
- 2000: 485
- 2002: 555

The graph also includes a CBS estimate for the year 2005, showing a projection of 555 projects.]
Comparison actual market development with marketing theory

Why?

• Next steps for ATES deployment

• Lessons for deployment of other renewable energy technologies
Diffusion curve

- Innovators (2.5%)
- Early adopters (13.5%)
- Early Majority (34%)
- Late majority (34%)
- Laggards (16%)

'Take-off' in the region 5%-15% of the market

Adoption of innovation vs. Time after introduction
Number of ATES projects in the Netherlands

Number of projects: 5, 34, 214, 271, 353, 438, 485

CBS estimate 2005: 555
Diffusion per time-unit

Source: Redrawn from Everett M. Rogers, Diffusion of innovations (Rogers, 1983).
Number of ATES projects per year

![Bar chart showing the number of ATES projects per year from 1986 to 2000. The number of projects increases significantly from 1996 onwards.]
NIKE European Headquarters
Hilversum

Cold storage: 2,000 kW
Operational since: 1999
IKEA Duiven

Direct cooling capacity: 750 kW
In operation since: 1999
Denemarkenstraat: new situation
Freesia nursery - Luttelgeest
Printing Office “Perscombinatie”
Amsterdam

Cold storage: 1,400 kW – Operational since: 2000
Market segmentation

- a set of customers
- for a given set of products or services
- with a common set of needs
- and who reference each other when making a buying decision

- Large bldgs: 64%
- Small bldgs: 9%
- Housing: 5%
- Industry: 12%
- Agriculture: 10%
Large commercial and institutional buildings 2002/2003

- 110-170 per year
- about 80 ATES projects per year
- 64% of ATES projects are large buildings
- 30-45% of large buildings apply ATES!

Conclusions:
Large buildings early majority → late majority
Other segments in early adopter stage
## Client characteristics

<table>
<thead>
<tr>
<th>Adopter type</th>
<th>Characteristic</th>
<th>Role and size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovators</td>
<td><img src="venturesome_enthusiast.png" alt="enthusiast" />; Enjoy the risk of being on the cutting edge</td>
<td>Market drivers. Want more technology, better performance. (16%)</td>
</tr>
<tr>
<td>Early adopters</td>
<td><img src="well_connected_visionaries.png" alt="visionaries" />; Risk takers; Horizontally connected and act as their peers</td>
<td></td>
</tr>
<tr>
<td>Early majority</td>
<td><img src="deliberate_pragmatists.png" alt="pragmatists" />; Want proven applications; Vertically connected and acts as their superiors</td>
<td>Followers on the market. Want solutions and convenience (68%)</td>
</tr>
<tr>
<td>Late majority</td>
<td><img src="skeptical_conservatives.png" alt="conservatives" />; Does not like change in general. Changes under ‘pressure’ from the majority</td>
<td></td>
</tr>
<tr>
<td>Laggards</td>
<td><img src="traditional_skeptics.png" alt="skeptics" />; Point of reference is ‘the good old days’</td>
<td>Actively resist innovations (16%)</td>
</tr>
</tbody>
</table>
# ATES market development for large buildings

<table>
<thead>
<tr>
<th>Aspect</th>
<th>E.A. “visionaries”</th>
<th>E.M. “pragmatists”</th>
<th>L.M. “conservatives”</th>
</tr>
</thead>
</table>
| product development | ▪ promising application  
▪ modifications acceptable | ▪ proven technology  
▪ warranty  
▪ standardisation | ▪ simple  
▪ complete |
| suppliers           | ▪ innovative       | ▪ reliable         
▪ experienced | ▪ competitive       
▪ service oriented |
| reference buyers    | ▪ own situation    
▪ vision/ideology  
▪ demonstration project | ▪ experience in own segment | ▪ independent info       
▪ (established organizations) |
| economic aspects    | ▪ SPOT < 5 years   
▪ specific grants | ▪ SPOT 5 - 10 years 
▪ generic subsidies | ▪ SPOT 5-10 years       
▪ generic subsidies |
Further market development ATES

Large buildings (EM→LM)
- standardization
- information dissemination by traditional channels
- turn-key
- out sourcing

Early markets (EA)
- promising applications
- demo projects
- information dissemination
Conclusions

- ATES has become a standard design option in the Netherlands for the large building market segment.
- For other market segments ATES is still in the Early Adopters stage.
- The marketing theory for the adoption of innovations should be understood for the successful market deployment of renewable energy technologies.
Thank you for your attention!