“Once upon a time in the west…”

The Dutch Environment of Industrial Energy Efficiency Improvement and Sustainability

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Dutch position in Europe

1995

2015
## Ranking Energy consumption per unit GDP (energy productivity)

<table>
<thead>
<tr>
<th>Onderwerpen</th>
<th>Ecologische duurzaamheid</th>
<th>Energieverbruik per eenheid bjp</th>
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<tr>
<td>Landen</td>
<td>kg olie-equivalent per 1 000 euro bjp</td>
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| Australië  | . 222 231 224 224 218 211 206 197 206 198 194 167 178 104 165 191 182 |
| Belgie     | 256 256 231 224 224 218 211 206 197 206 198 194 167 178 104 165 191 182 |
| Canada     | . 123 120 133 120 115 108 102 104 101 105 100 95 99 95 85 79 74 91 |
| Denemarken | 123 120 133 120 115 108 102 104 101 105 100 95 99 95 85 79 74 91 |
| Duitsland  | 175 174 178 177 170 163 159 161 158 160 158 156 151 143 142 143 142 129 |
| Finland    | 205 207 201 274 264 253 238 239 247 255 248 232 233 219 209 216 225 212 |
| Frankrijk  | 171 174 182 172 172 167 163 165 164 164 163 163 151 155 150 151 149 152 143 |
| Hongarije  | 420 429 409 388 373 350 345 331 325 307 312 286 292 280 292 295 293 283 |
| Ierland    | 137 131 124 123 117 111 112 107 101 98 93 90 88 91 91 93 83 |
| Italië     | 128 131 130 129 131 131 129 127 126 132 131 131 127 124 123 122 124 121 |
| Japen      | . . 187 186 187 175 170 162 159 161 161 165 164 151 151 156 149 151 158 147 |
| Nederland  | 187 186 187 175 170 162 159 161 161 165 164 151 151 156 149 151 158 147 |
| Oostenrijk | 139 141 147 143 140 134 129 135 134 140 139 140 136 129 128 126 132 126 |
| Polen      | . . 620 606 586 498 464 428 426 414 409 390 381 377 351 340 322 331 318 |
| Spanje     | 162 161 155 159 160 160 158 159 159 161 159 153 149 144 137 137 138 |
| Tsjechië   | . . 533 526 516 516 477 482 480 474 477 467 433 414 391 371 364 375 356 |
| Verenigd Koninkrijk | 171 166 169 157 154 150 145 142 135 132 129 126 122 113 111 112 104 |
| Verenigde Staten | 241 239 235 228 220 216 213 206 205 201 198 193 186 186 181 177 . . |
| Zuid-Korea | . . . . . . . . . . . . . . . . . . . . |
| Zweden     | 235 229 231 219 214 201 182 191 151 183 182 173 162 156 156 151 159 149 |

In 2011, Nederland was ranked in 8th position.
Ranking RES share in gross energy consumption

Share: 4.5% 2013
Goal: 14% 2020
Dutch Industrial Energy Consumption

Nederlands industrieel energiegebruik

- Een economische waarde van ca. 6 miljard euro per jaar
- Jaarlijks wordt ca. 1% bespaard (= 60 miljoen euro)

ca. 540 PJ (excl. feedstock)
Industrial Networks energy efficiency and sustainability

- Chain based (Energy efficiency obligation)
- Product based (recovery/reuse of waste, materials)
- Area based (Rotterdam Climate Initiative)
- Problem based (animal manure processing)
- Policy based
  - National Agreements Industrial energy efficiency
    - Sector based networks
  - Green deals
    - Initiates solution oriented networks
  - National Energy agreement 2013
    - Ambition initiated networks
Area based
Problem based network
Policy initiated networks: Sector based long term agreements

- Period 1992-2020
- Voluntary agreements on energy efficiency improvements Governments:
  - Industry (with and without ETS)
  - Agriculture
  - Services
- Currently MJA-3: 2008-2020
Goal

- Industry makes an effort of 30% energy-efficiency improvement in the period 2005-2020
Framework

- Company based energy efficiency plans: design, implemented, monitored and reported
- Annual monitoring and reporting of energy consumption
- Implementation company based energy management system
- Sector: roadmaps energy efficiency 2030
- Government: facilitating platform, implementation organisation, financial support
National energy consumption
Efficiency improvement sectors
Industry
Green deal: local networks and government

- Deal between green societal initiatives and government
- Society invests in energy efficiency, green energy, green tech
- Government supports, facilitates and modifies rules and policies in favor of green innovation as much as possible
- No public subsidies/funding involved
National Energy Agreement September 2013

- An average energy efficiency saving of 1.5% per year (adding up to a reduction of 100 PJ by 2020).

- 14% share of renewable energy in the Netherlands’ total consumption of energy by 2020.

- And 16% by 2023 (4.5% in 2013).

- Creating at least 15,000 additional jobs by 2020, of which a significant number to be created in the next years.

In addition, signatories have committed themselves to several other, long-term actions.

- National agreement
- 47 organisations
  Representing:
  - Governmental layers
  - Industry
  - Employer/labor unions
  - Environmental NGO’s
  - Financial organisations
National Energy Agreement September 2013

1. Energy saving in the built environment
2. Energy saving in industry and agriculture
3. Scaling-up renewable energy production
4. Decentralised renewable energy generation
5. Centralised energy transportation networks
6. European Emission Trading System
7. Coal power plants and CCS
8. Transport sector
9. Employment and training
10. Commercialisation of new technologies for economic growth and export
11. Financing investments
12. Heat
Monitoring

Principles for monitoring:
- Signatories to the Agreement are responsible for implementing the described actions, particularly for those actions assigned to them.
- Signatories to the Agreement have a common obligation to successfully implement the Agreement.

Tasks of the Committee
The Standing Committee to the Agreement on Energy for Sustainable Growth:
- monitors the progress of the Agreement;
- directs activities when delays become apparent;
- keeps under review the need for amending (parts of) the Agreement in order to meet its objectives;
- develops an agenda that goes beyond the Agreement’s validity.
Conclusion

- Matured Institutional framework
  - Some parts more productive than others

- Governance model: Selfgovernance/Co-production
  - Risk: “Occupying” innovation and change
    - Example: 10 years of energy transition management
    - Monitoring impacts
    - Pro: Acceptance, support, awareness raising, shared responsibility, tit-for-tat

- Difficult to identify the impact in cocktail of policy instruments and authonomous efficiency improvement
Thanks for your attention