SEMINARIO DI AGGIORNAMENTO PROFESSIONALE
Making City - Groningen pilot City

Municipality of Groningen Jasper Tonen

February 18, 2022

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This project has received funding from the European Union’s Horizon 2020 Research and Innovation programme under grant agreement N° 824418.
PED North, Nijestee apartments
PED North, Energy Academy Europe
PED North, demo Houses

House A
Construction year 1975

House B
Construction year 2008

House C
Construction year 2006

House D
Construction year 1966
PED North, interventions in houses

House A
PED North, interventions in houses

House C
PED North, energy balance

The estimated final energy balance and project impact in the North PED.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Baseline [kWh]</th>
<th>Current [kWh]</th>
<th>Projected [kWh]</th>
<th>Impact [kWh]</th>
</tr>
</thead>
<tbody>
<tr>
<td>House A</td>
<td>16,752</td>
<td>16,752</td>
<td>-37</td>
<td>-16,78</td>
</tr>
<tr>
<td>House B</td>
<td>6,178</td>
<td>6,178</td>
<td>134</td>
<td>-6,04</td>
</tr>
<tr>
<td>House C</td>
<td>20,361</td>
<td>6,863</td>
<td>-150</td>
<td>-20,51</td>
</tr>
<tr>
<td>EAE</td>
<td>-</td>
<td>-192,464</td>
<td>-192,464</td>
<td>-192,464</td>
</tr>
<tr>
<td>Nijestee flats</td>
<td>807,909</td>
<td>674,545</td>
<td>655,862</td>
<td>-152,04</td>
</tr>
<tr>
<td>Sungrazer PV</td>
<td>-</td>
<td>-5,442</td>
<td>-5,442</td>
<td>-5,442</td>
</tr>
<tr>
<td>Slibdepot Solar heat</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Waste heat recovery</td>
<td>-</td>
<td>-</td>
<td>512,244</td>
<td>-512,244</td>
</tr>
<tr>
<td>Total</td>
<td>851,200</td>
<td>506,433</td>
<td>-54,341</td>
<td>-905,54</td>
</tr>
</tbody>
</table>
PED Southeast, energy balance

Energy balance at the start of the project and at the end for the Southeast PED.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Baseline [kWh]</th>
<th>Current [kWh]</th>
<th>Projected [kWh]</th>
<th>Impact [kWh]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediacentrale</td>
<td>2,358,960</td>
<td>993,057</td>
<td>958,771</td>
<td>-1,400,189</td>
</tr>
<tr>
<td>Sportscentre Europahal</td>
<td>-</td>
<td>-136,229</td>
<td>-136,229</td>
<td>-136,229</td>
</tr>
<tr>
<td>Powerhouse</td>
<td>-</td>
<td>546,561</td>
<td>546,561</td>
<td>546,561</td>
</tr>
<tr>
<td>DH heat source</td>
<td>-</td>
<td>-361,926</td>
<td>-361,926</td>
<td>-361,926</td>
</tr>
<tr>
<td>Solar park Woldjespoor</td>
<td>-175,016</td>
<td>-175,016</td>
<td>-175,016</td>
<td>-</td>
</tr>
<tr>
<td>Solar park Roodehaan</td>
<td>-</td>
<td>-408,371</td>
<td>-977,173</td>
<td>-977,173</td>
</tr>
<tr>
<td>Solaroad</td>
<td>-</td>
<td>-</td>
<td>-61,200</td>
<td>-61,200</td>
</tr>
<tr>
<td>Floating pontoons</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PV on parking top</td>
<td>-</td>
<td>-</td>
<td>111,350</td>
<td>-111,350</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,183,944</strong></td>
<td><strong>458,076</strong></td>
<td><strong>-317,561</strong></td>
<td><strong>-2,501,506</strong></td>
</tr>
</tbody>
</table>
Monitoring

Groningen Urban Data Platform

Sustainable Buildings Platform (Action 7)

Energy Islands Platform (Action 37)

Open Data Platform of Groningen (Action 35)

Building Owner

TNO

Prosumer

Consortium Partners

Municipality

Simulator (Action 32)

Energy Islands Insight

Energy Data Monitoring (Action 36)

CPMS (Action 34)

Heat Matcher (Action 9/10)

TNO

Citizen

Dashboard

SensorThings

SensorThings

CKAN

Manually (SRT)

Other Lighthouse Projects

Software system

Stakeholder

Device

SCIS

Gateway

Meters/Sensors

HeatMatcher

EV Charging

CPMS plain/SensorThings?

[optional] SensorThings?

Making City
Monitoring
Thank you

Get in touch for more information!

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Project information available on the
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