

## Field test results of innovative back contact modules versus commercial modules

### Field test results 2017

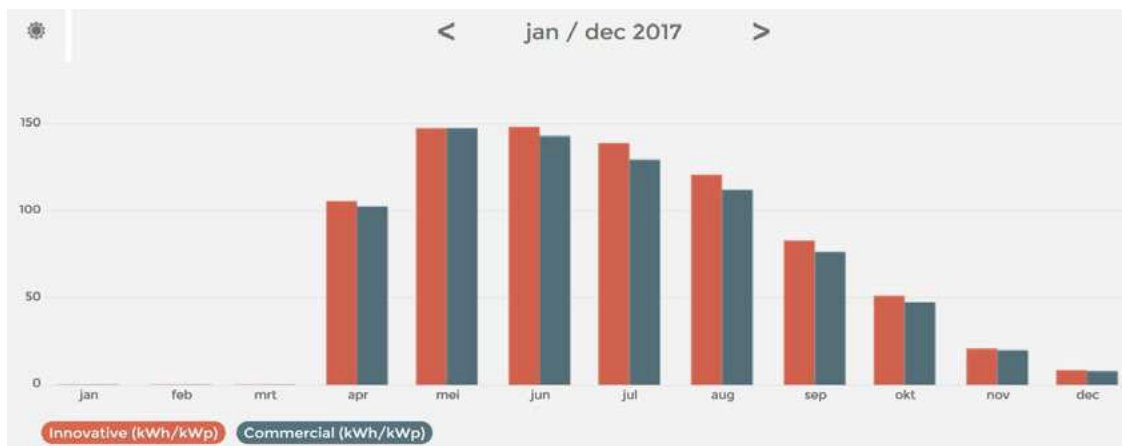
This sheet shows the performance of innovative back contact modules versus commercial modules in a field test on eight test sites in the Netherlands. Each site contains a system of typically 48 innovative and 48 commercial modules. Most systems are facing south under an angle of 12°, except for two sites [6 & 8]. The charts show the normalised monthly energy output per system in kWh/kWp. The nominal value of the modules is 260-300 Wp.

All innovative modules are from the Dutch company Exasun with p-type mwt-perc cells. The commercial modules are from JA Solar, CSun or NSP with p-type H-pattern cells. The systems were installed over the course of 2017 and are going to be monitored during five years. The monitoring is carried out using the flexible smart grid system Wendy of Flexicontrol. The charts will be updated every quarter during the monitor period by SiCC partner Solar Electricity Development.



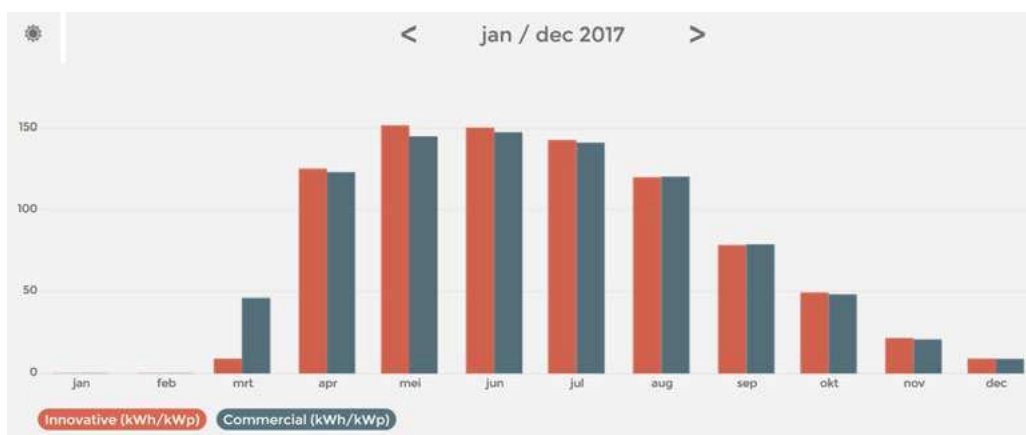
## Figure 1: De Geus in Broek op Langedijk

This site contains 48 Exasun modules (295 Wp) and 48 NSP modules (300 Wp). The site is fully operational since April 2017.



## Figure 2: Henselmans in Broek op Langedijk

This site contains 48 Exasun modules (295 Wp) and 48 NSP modules (295 Wp). The site is fully operational since April 2017.





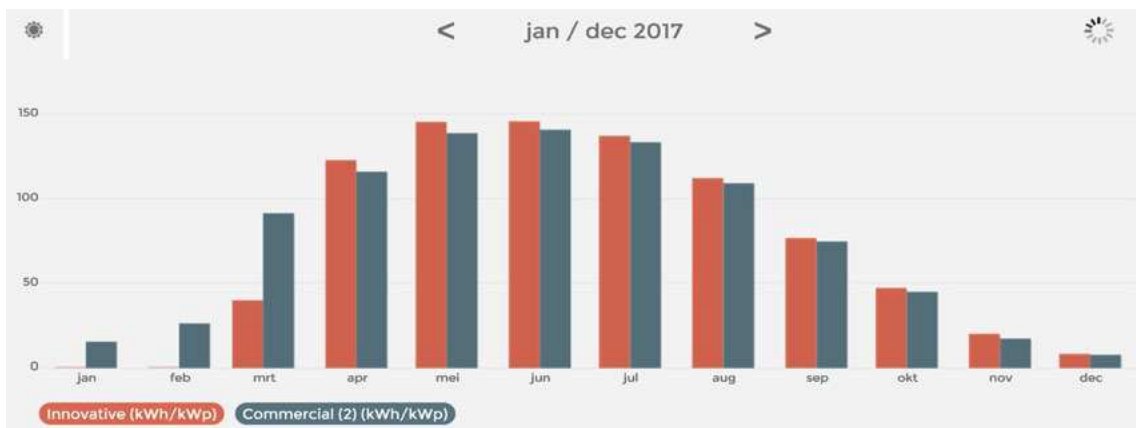
### Figure 3: Vlug in Broek op Langedijk

This site contains 48 Exasun modules (295 Wp) and 48 NSP modules (295 Wp). The site is fully operational since April 2017.



### Figure 4: NMA in Broek op Langedijk

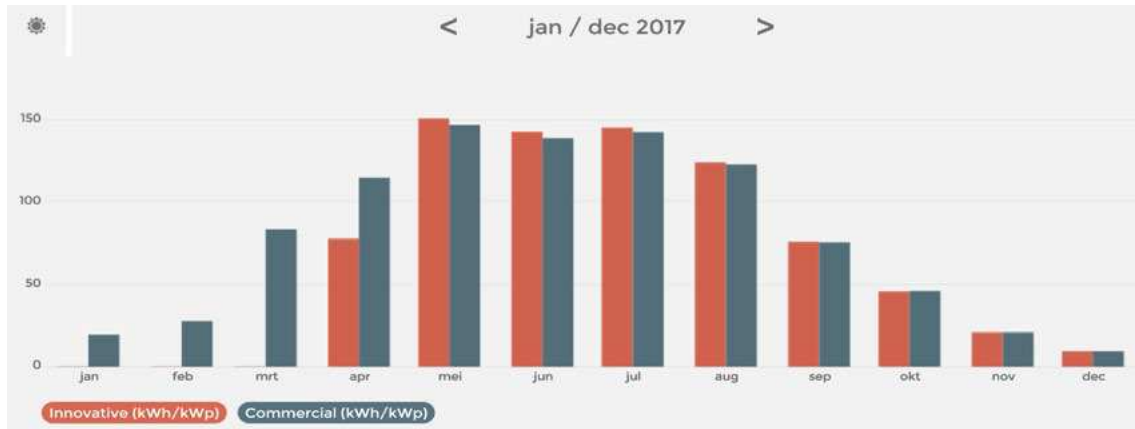
This site contains 48 Exasun modules (295 Wp) and 576 CSun modules (260 Wp). The site is fully operational since April 2017. The graph shows the results of 48 CSun modules.





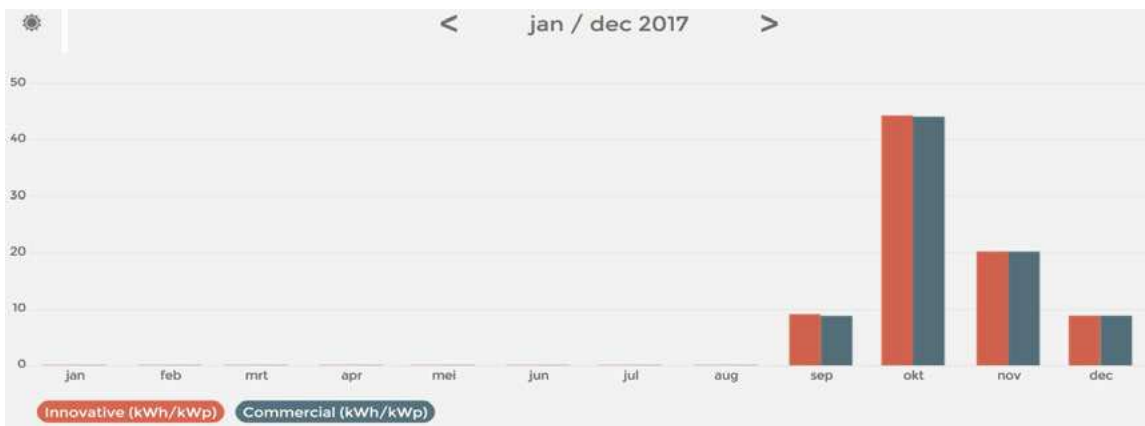
## Figure 5: Dycomet in Akkrum

This site contains 46 Exasun modules (295 Wp) and 45 JA Solar modules (290 Wp). The site is operational since mid-April 2017.



## Figure 6: InBalance in Roelofarendsveen

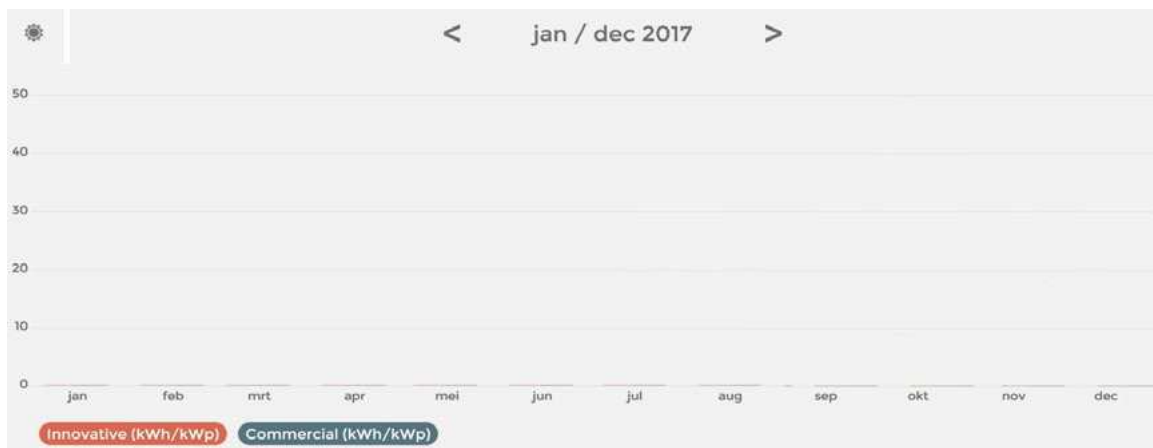
This site contains 48 Exasun modules (300 Wp) and 48 NSP modules (300 Wp). The module orientation is east-west for both systems. The site is fully operational since end September 2017. Please note the different range of the y-axis.





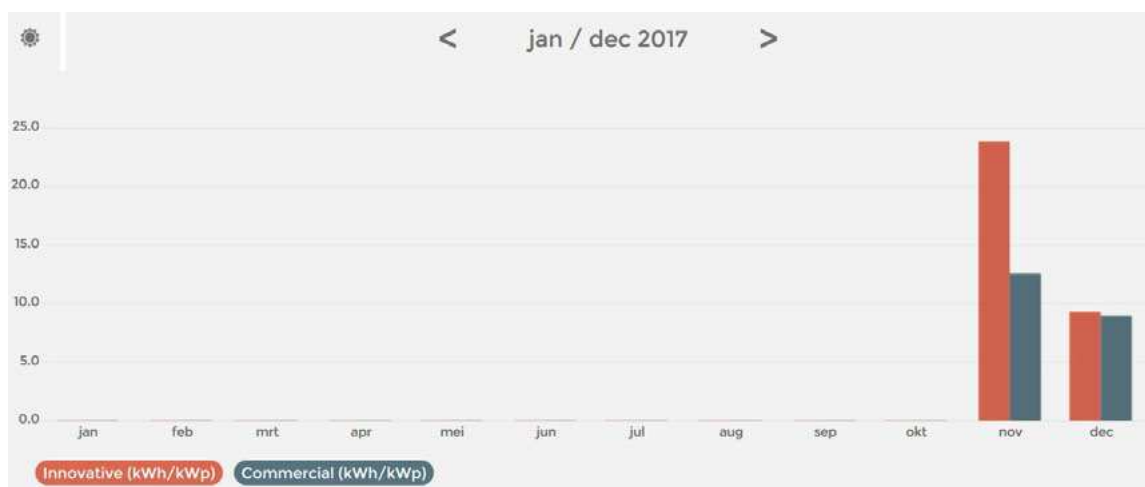
## Figure 7: Utrecht University

This site contains 48 Exasun modules (300 Wp) and 48 NSP modules (300 Wp). The site is fully operational since October 2017. However, the monitoring system will be connected early 2018.



## Figure 8: Municipality of Schagen

This site contains 48 Exasun modules (285 Wp) and 48 NSP modules (300 Wp). The modules are mounted on a mono-pitched roof (20°) and the orientation is W-SW. The site is fully operational since October 2017. However, the monitoring system was connected mid-November 2017. Please note the different range of the y-axis.





## Overview

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Test site	Innov.	Comm.
1. De Geus	295 Wp	300 Wp
2. Henselmans	295 Wp	295 Wp
3. Vlug	295 Wp	295 Wp
4. NMA	295 Wp	260 Wp
5. Dycomet	295 Wp	290 Wp
6. InBalance	300 Wp	300 Wp
7. Utrecht University	300 Wp	300 Wp
8. City of Schagen	285 Wp	300 Wp

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