SkyFoundry

"Stroomversnelling" Advanced Analytics at Net-Zero Homes

Case Study
October 2017

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Overview

"Stroomversnelling" is an innovation program in which existing homes from the 1960s and 70s are being renovated to net-zero energy homes or "Zero-at-the-Meter" homes. Zero-at-the-Meter means that the house generates at least as much energy as it consumes. Stroomversnelling, the project where builders and housing corporations work together, aims to launch Zero-at-the-Meter renovations and make it more feasible and affordable.

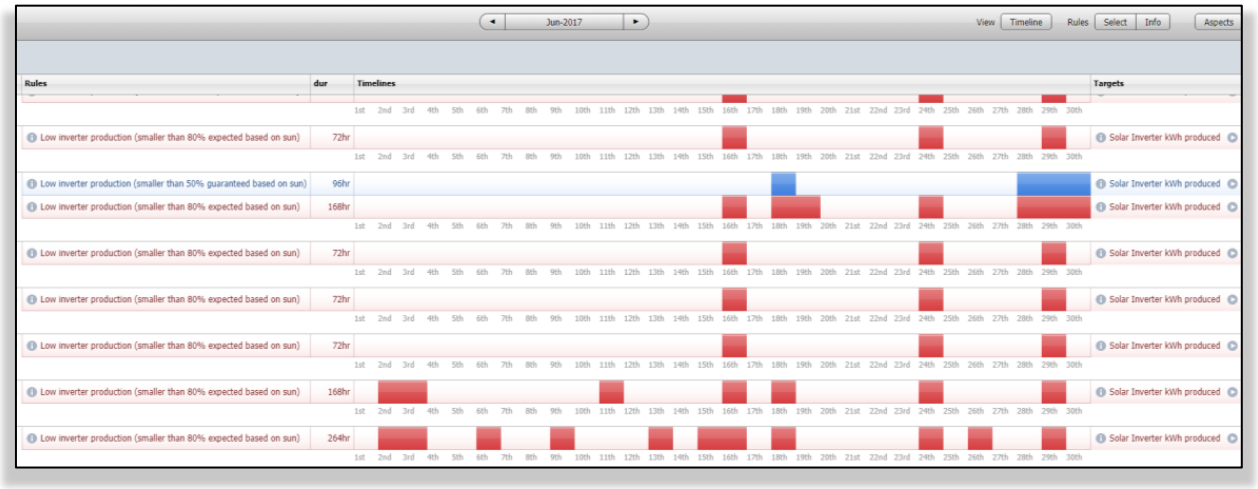
After renovation, the houses have no gas supply anymore but instead are heated with an electric heat pump. The houses are very well insulated, the roof is covered with solar panels and the residents are getting a new kitchen and a new bathroom. The renovated property is as well durable as comfortable and the life span of the home has been extended for a minimum of 40 years, during which time **BAM Energy Systems** is responsible for energy performance.

The construction division of BAM has been renovating around 500 homes as part of the Stroomversnelling program, and many more are still on schedule. For a period of 40 years, BAM is responsible for the entire technical working of the home and its climate installations as well as to guarantee the Zero-at-the-Meter requirements. If this is not the case, BAM is responsible for the costs. That's why it's crucial that is why it is essential to provide efficient, continuous monitoring to detect dysfunctions quickly.

The construction process is different from conventional construction. In advance everything is precisely measured with Lidar(1) scanners. It results in a 3D digital construction model, and based on that, all building modules (facades/roof/power module) are prefabricated at the factory and then constructed on site. This process is called modular building. The renovation is quick and efficient, in addition, the residents are experiencing as little disturbance as possible.

The Role of SkySpark

Quarterly/hourly consumption is sent from every house. The data are analyzed by mean of automatic algorithms. SkySpark is the tool used by **BAM Energy Systems** to do this. We monitor whether the homes have generated individually enough energy, given the amount of sun that day. We also compare the energy production per house compared with the neighbors. In addition, we look at whether the data connection still is "live", if the heat pump does not stay for too long in the same mode and if water temperature in the boiler is right. If something is out of specs, BAM Facility Management receives a notification and take care to solve the problem.



At the same time, periodic SkySpark reports are printed about the performance of the houses. Additionally, in the event of eventual complaint from residents, a remote check can be performed to assess if the complaint has solid grounds and where the cause of the problem may be. Finally, we also analyze the data in order to optimize the systems e. g. a heat pump.

SkySpark is specifically designed to analyze building performance in order to increase comfort, reduce energy consumption and minimalize maintenance. SkySpark allows us to analyze quickly and accurately large amounts of data (more than 6.000 data points for the project Stroomversnelling) from different sources. This enables us to prevent problems and intervene whenever necessary.

About BAM Energy Systems

BAM Energy Systems designs, realizes and monitor sustainable energy systems for offices and homes. We guarantee energy usage, the energy bill and the comfort and the well-being of the users of real estate.

For more information about BAM Energy Systems please visit:
https://www.bambouwentechniek.nl/specialismen/bam-energy-systems

SkySpark® – Analytics for a World of Smart Device Data

The past decade has seen dramatic advances in automation systems and smart devices. From IP connected systems using a variety of standard protocols, to support for web services and xml data schemas, it is now possible to get the data produced by the wide range of devices found in today's buildings and equipment systems.

Access to this data opens up new opportunities for the creation of value-added services to help businesses reduce energy consumption and cost and to identify opportunities to enhance operations through improved control, and replacement or repair of capital equipment. Access to the data is just the first step in that journey, however. The new challenge is how to manage and derive value from the exploding amount of data available from these smart and connected devices. SkyFoundry SkySpark directly addresses this challenge.

The new frontier is to efficiently manage and analyze data to **find what matters™**.

About SkyFoundry

SkyFoundry's mission is to provide software solutions for the "Internet of Things". Areas of focus include:

- Building automation and facility management
- Energy management, utility data analytics
- Remote device and equipment monitoring
- Asset management

SkyFoundry's software helps customers derive value from their investments in smart systems. Learn more and request a demonstration at www.skyfoundry.com.

SkyFoundry

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