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Project

Report Flow

(2022-05 - 2022-06)

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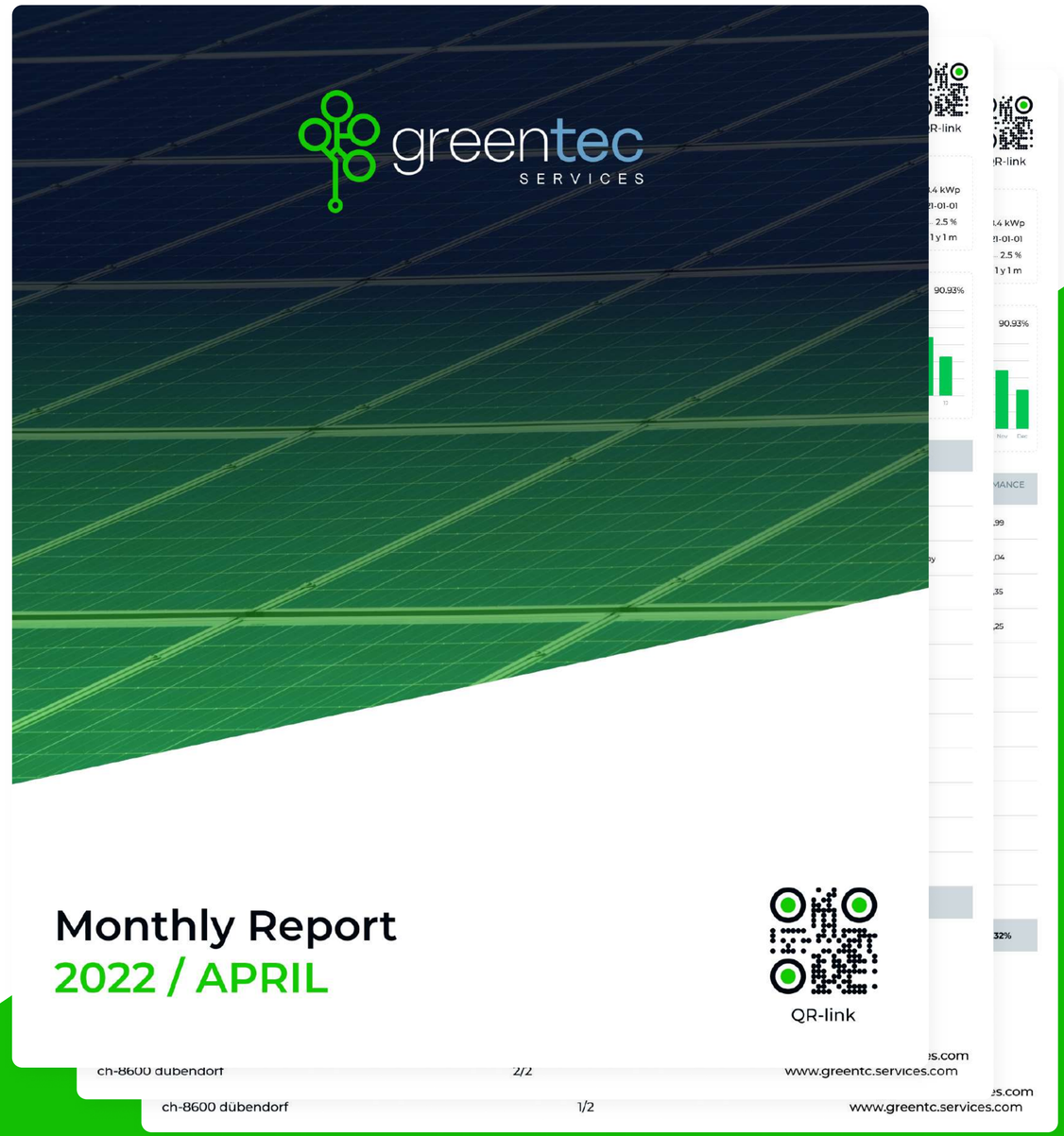
Objectives

Design and develop a platform that will manage reporting generation for clients based on several input sources

- Automatically collect data from different sources
- Automatically recalculate when new data is received
- Support editing/correction for data input and do live view when data is changed
- Generate a monthly report in PDF automatically when new data is received or data is corrected
- Send PDF report from the web interface to emails



Challenges

During development there was a challenge how to import data from different sources and convert it into an internal format. We solved this with data creating services that fetch data in a scheduled manner

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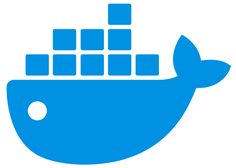
Technologies

Python

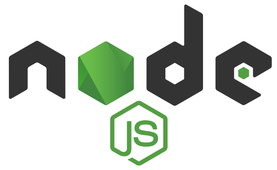


Docker

Kafka

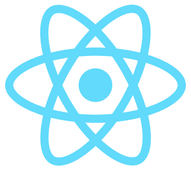
Postgres

FastAPI



NodeJS

TypeScript



React

Pandas

Timeline & Team

4 team members

4 weeks of development

https://www.greentec-services.com/en

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Specialised reporting software for a sustainable future

The transition to renewable energy has never been more important. Solar power plays a central role in fulfilling our energy needs.

greentec services is a specialized service provider in the technical management of solar power systems.

They are experts at the maintenance, monitoring, analysis and reporting for complex operations. Currently operates around 180 ground- and roof-mounted systems with a peak power of approximately 240 MWp.

greentec services customers need to identify problems as soon as they occur. They need to react fast, prevent downtime and ensure optimal efficiency.

greentec services collects millions of data points every month from its customers. They perform fine output analysis to identify even the smallest changes and identify issues. The tiniest fluctuations can be indicators of larger problems. The faster you see them, the better you can react.

https://www.greentec-services.com/en

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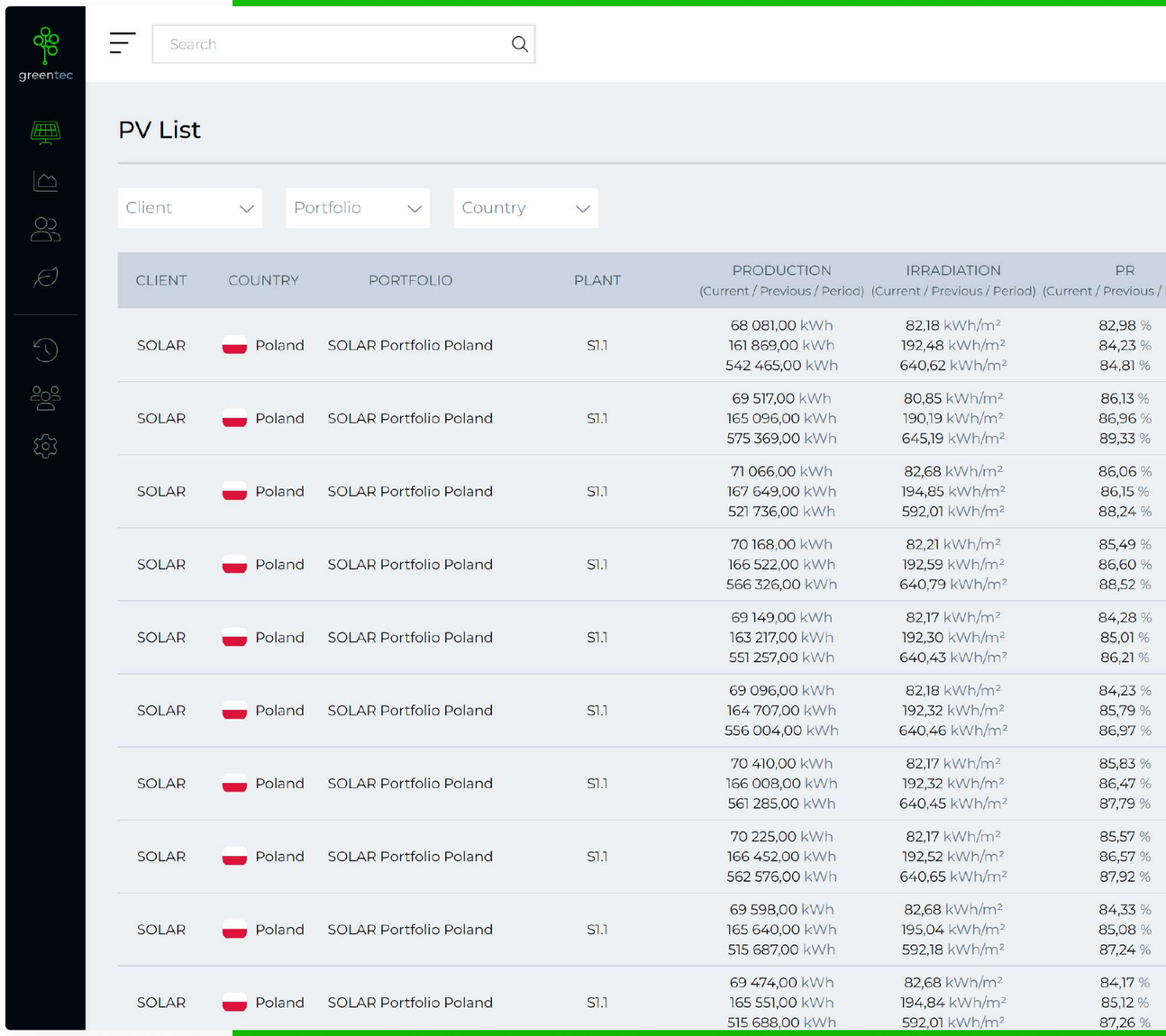
- But how do you turn millions of data points into clear, actionable intelligence?
- How do you see discrepancies in millions of lines of numbers?
- How can you react to anomalies if you can’t see them?



CLIENT	COUNTRY	PORTFOLIO	PLANT	PRODUCTION (Current / Previous / Period)	IRRADIATION (Current / Previous / Period)	PR (Current / Previous /
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	68 081,00 kWh 161 869,00 kWh 542 465,00 kWh	82,18 kWh/m² 192,48 kWh/m² 640,62 kWh/m²	82,98 % 84,23 % 84,81 %
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	69 517,00 kWh 165 096,00 kWh 575 369,00 kWh	80,85 kWh/m² 190,19 kWh/m² 645,19 kWh/m²	86,13 % 86,96 % 89,33 %
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	71 066,00 kWh 167 649,00 kWh 521 736,00 kWh	82,68 kWh/m² 194,85 kWh/m² 592,01 kWh/m²	86,06 % 86,15 % 88,24 %
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	70 168,00 kWh 166 522,00 kWh 566 326,00 kWh	82,21 kWh/m² 192,59 kWh/m² 640,79 kWh/m²	85,49 % 86,60 % 88,52 %
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	69 149,00 kWh 163 217,00 kWh 551 257,00 kWh	82,17 kWh/m² 192,30 kWh/m² 640,43 kWh/m²	84,28 % 85,01 % 86,21 %
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	69 096,00 kWh 164 707,00 kWh 556 004,00 kWh	82,18 kWh/m² 192,32 kWh/m² 640,46 kWh/m²	84,23 % 85,79 % 86,97 %
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	70 410,00 kWh 166 008,00 kWh 561 285,00 kWh	82,17 kWh/m² 192,32 kWh/m² 640,45 kWh/m²	85,83 % 86,47 % 87,79 %
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	70 225,00 kWh 166 452,00 kWh 562 576,00 kWh	82,17 kWh/m² 192,52 kWh/m² 640,65 kWh/m²	85,57 % 86,57 % 87,92 %
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	69 598,00 kWh 165 640,00 kWh 515 687,00 kWh	82,68 kWh/m² 195,04 kWh/m² 592,18 kWh/m²	84,33 % 85,08 % 87,24 %
SOLAR	Poland	SOLAR Portfolio Poland	S1.1	69 474,00 kWh 165 551,00 kWh 515 688,00 kWh	82,68 kWh/m² 194,84 kWh/m² 592,01 kWh/m²	84,17 % 85,12 % 87,26 %

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Enter Belicherg Software.

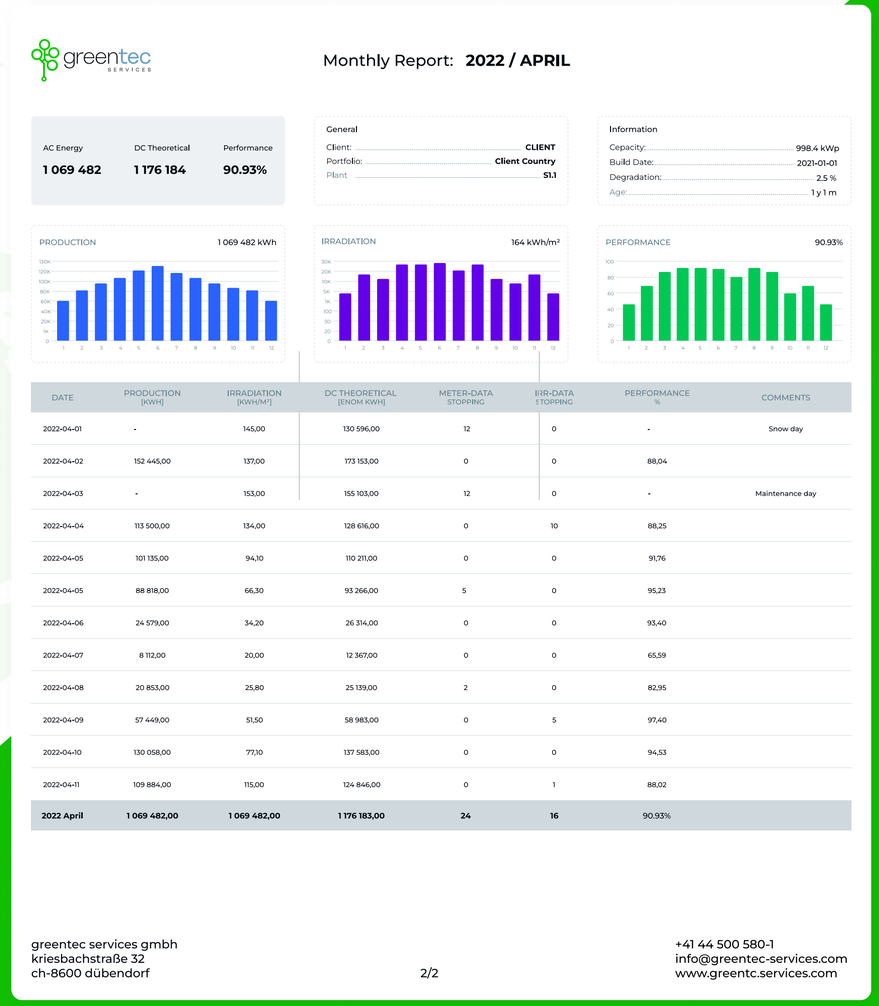
Belichberg designed and built completely new data management and reporting system for greentec services.

They centralized the storage of data points from various sources.

They then designed a data processing system that converts this data into ready-to-use formats to be used in the greentec services reporting.

Next, Belichberg built a customized ergonomic reporting dashboard with automatic notifications and PDF creation.

A clear, transparent reporting overview allows greentec services to monitor performance, identify problems and provide their clients with detailed, practical performance reports at the click of a button.



greentec SERVICES

Monthly Report: **2022 / APRIL**

AC Energy	DC Theoretical	Performance
1 069 482	**1 176 184**	**90.93%**

General
Client: **CLIENT**
Portfolio: **Client Country**
Plant: **S1.1**

Information
Capacity: 998.4 kWp
Build Date: 2021-01-01
Degradation: 2.5 %
Age: 1 y 1 m

PRODUCTION 1 069 482 kWh

IRRADIATION 164 kWh/m²

PERFORMANCE 90.93%

DATE	PRODUCTION [kWh]	IRRADIATION [kWh/M²]	DC THEORETICAL [ENOM kWh]	METER-DATA STOPPING	IRR-DATA STOPPING	PERFORMANCE %	COMMENTS
2022-04-01	-	145,00	130 596,00	12	0	-	Snow day
2022-04-02	152 445,00	137,00	173 153,00	0	0	88,04	
2022-04-03	-	153,00	155 103,00	12	0	-	Maintenance day
2022-04-04	113 500,00	134,00	128 616,00	0	10	88,25	
2022-04-05	101 135,00	94,10	110 211,00	0	0	91,76	
2022-04-05	88 818,00	66,30	93 266,00	5	0	95,23	
2022-04-06	24 579,00	34,20	26 314,00	0	0	93,40	
2022-04-07	8 112,00	20,00	12 367,00	0	0	65,59	
2022-04-08	20 853,00	25,80	25 139,00	2	0	82,95	
2022-04-09	57 449,00	51,50	58 983,00	0	5	97,40	
2022-04-10	130 058,00	77,10	137 583,00	0	0	94,53	
2022-04-11	109 884,00	115,00	124 846,00	0	1	88,02	
2022 April	**1 069 482,00**	**1 069 482,00**	**1 176 183,00**	**24**	**16**	90.93%	

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greentec SERVICES

Saves time

Saves money

Has more details

Can see discrepancies faster than ever

Can give their clients reliable reports and peace of mind

The new reporting system designed and built by Belichberg is robust, fast and scalable.

BELICHBERG

The transition to sustainable electricity production can accelerate at speed, safe in the knowledge that the installations are being used as efficiently as possible.

Turn your business idea into reality, on time, and on budget

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