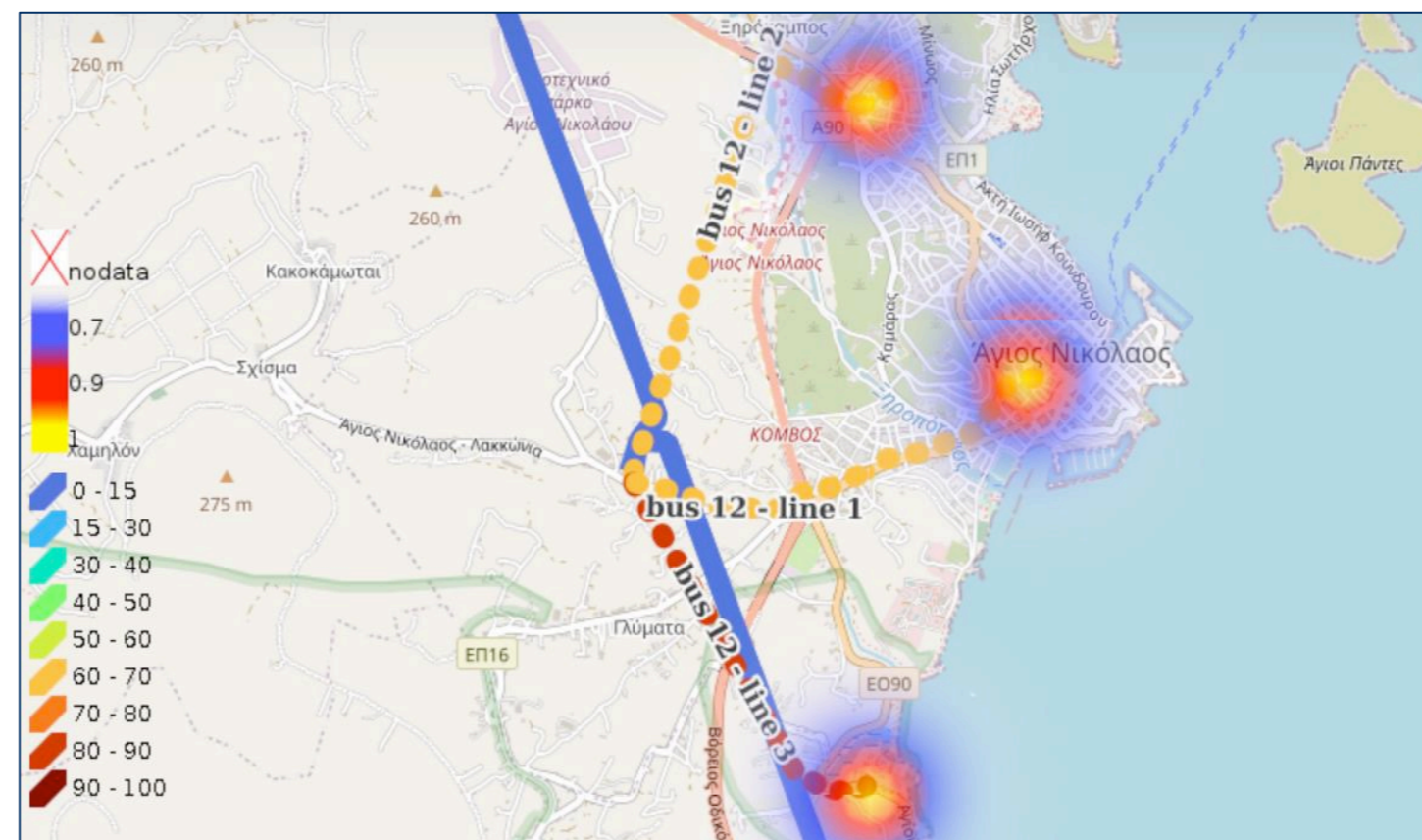# ONENET
one network for Europe

GREEK DEMO
One platform for all market participants

Problem Statement

In the era of technological turmoil in the power sector, the tasks and challenges posed before the participants in the energy market are like nothing that had happened before. With the replacement of the conventional units with the decentralized renewable sources and introduction of the new participants in energy market, many difficulties related to unpredictability of those sources and ways of communication between the participants arose. It is exactly in these areas that the Greek Demo of the OneNet project had found its role and potential that was just waiting to be fulfilled.

Demo's Innovation

In order to provide a response to mentioned issues, partners in Greek Demo invested remarkable to develop and present the F-channel platform – web-based, client-server application that is intended for TSO-DSO communication.
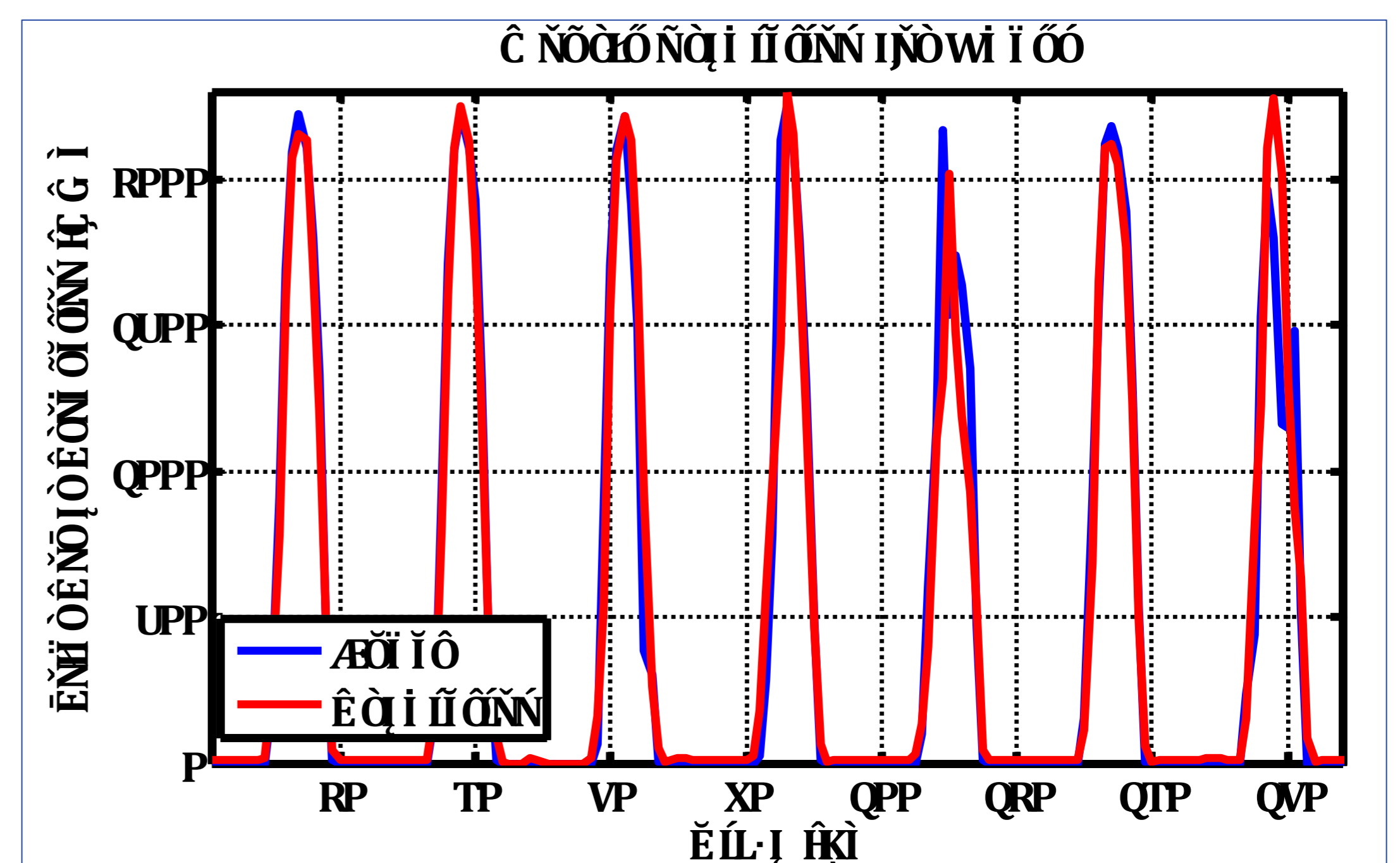

Showcase of load flow results

Platform uses weather forecasting, AI-based methods, map-based GUI and the cloud calculation engines to allow its users both the maximum functionalities and the maximum of comfort. Platform is separated into two modules that combine to fulfil the needs of the users – forecasting module and coordination module.

Results and Lessons Learned

To prove that the Greek Demo has moved from words and focused more on deeds, the partners have conducted the testing of some of the developed algorithms, using the real-life data obtained from operators of the power grid in Greece. This has proven immense improvements in the accuracy of the forecasts of renewable units compared to the currently available tools (both for SPPs and WPPs, the forecasting error was reduced to about 1%). Moreover, other built-in functions of platform helped in precisely detecting severe weather conditions and cyber-attacks. Relevance of the latter does not need to be clarified anymore, with information leaks becoming major threat for participants in energy market. To counter that, F-channel platform offers its users reliable manner of participating in energy market, all that while keeping their data out of harm's way.
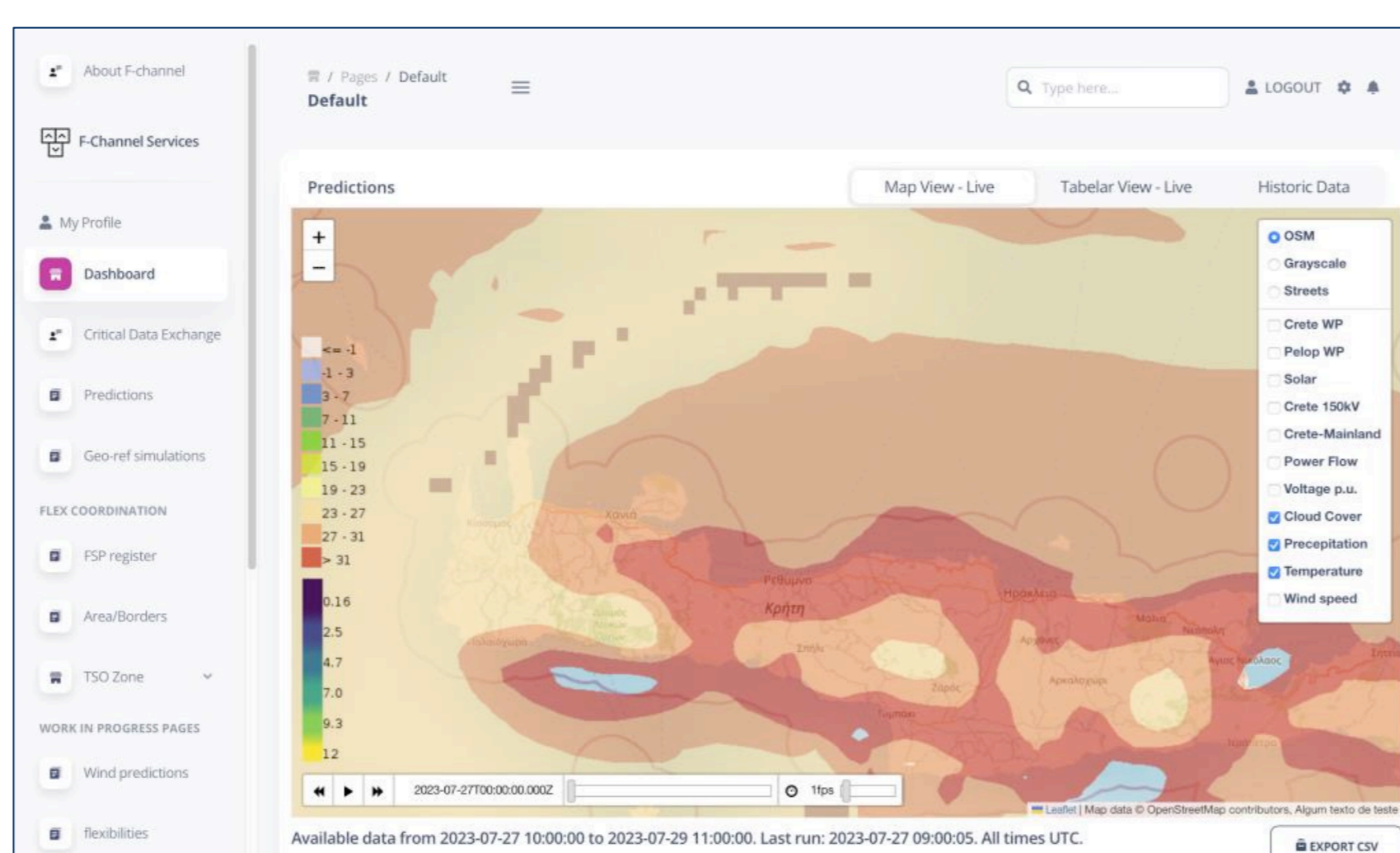

Achieved forecasting accuracy for SPPs

Main Challenges

Since this kind of platform did not exist before the initiation of the activities of demo, there was no benchmark solution to which the partners could look up. All the codes for F-channel platform had to be developed from scratch, while balancing the desire to provide as much functions as possible and maintaining the user friendly environment to make the introduction of new clients simple.

It is with much pride that we state that both of the wishes are considered fulfilled. This just proves common motto by which the challenges in the world of technology are nothing more than room for the new innovations waiting to be discovered. That is the task we label accomplished.

Work environment of F-channel

Recommendations

Our work is far from done with completion of the Greek Demo. This platform provides any future researchers with luxury not available to us three years ago – the foundation to build upon. This is why we hope that the energy world of the future can expect solutions improving on the various aspects included in F-channel platform, such as the development of grid digital twins, high-accuracy forecasts, using maps as the work environment, and keeping the communication among different participants in the market constant and safe. And if there is anything certain regarding the future, it is that the partners once involved in Greek Demo will be there in order to help the vision of OneNet project finally come to life.

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