RESEARCH PROJECT „ADRES-CONCEPT“

Funded by:

- Federal Ministry for Transport, Innovation and Technology (BMVIT)
- Federal Ministry of Economic Affairs and Labour (BMWA)

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- Austrian Research Promotion Agency (FFG)

Framework Program:

- „Energie der Zukunft“

Project Consortium:

- Vienna University of Technology (Institute of Energy Systems and Electrical Drives, Institute for Energy Systems and Thermo-dynamics)
- AIT Austrian Institute of Technology GmbH (Energy Department, Electric Energy Systems)
- Infineon Technologies Austria AG
- VERBUND – Austrian Power Grid AG (APG)
- Wien Energie Stromnetz GmbH
- Energie AG OÖ Netz GmbH
- EVN Netz GmbH
- Burgenländische Elektrizitäts-wirtschafts-Aktiengesellschaft (BEWAG)

Content:

The research project "ADDRESS-CONCEPT" aims to develop a holistic concept for the future energy supply using intelligent, renewable and efficient energy systems (Autonomous Decentralized Regenerative Energy Systems – ADRES). Via combination of regenerative energy sources, intelligent power grid management and highest efficiency in the entire energy chain, especially in innovative end use appliances, a regional full supply of all energy services (heat, electricity and local mobility) with low emission will be possible.

ADRES Dataset:

In the course of the research project "ADDRESS-CONCEPT", under the direction of the Vienna University of Technology (Institute for Energy Systems and Electrical Drives), a dataset for Austrian households consisting high-resolution electrical power and voltage values were generated. The measurements were carried out by the distribution network operator Energie AG Netz GmbH and the subsequent validation and formatting were made by the AIT - Austrian Institute of Technology (Department of Energy, Electric Energy Systems). **These results are expressed as a binary file in MATLAB format (.mat) and they are available for download on the website www.ea.tuwien.ac.at.**

If you have further questions, please contact: adres@ea.tuwien.ac.at

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By using the data as part of scientific publications, the User shall refer to the research project "ADRES-CONCEPT" as follows:

The Data was generated in the research project "ADRES-CONCEPT" (EZ-IF: Development of concepts for ADRES – Autonomous Decentralized Regenerative Energy Systems, project no. 815 674). This project was funded by the Austrian Climate and Energy Fund and performed under the program "ENERGIE DER ZUKUNFT".

DESCRIPTION OF THE ADRES DATASET

In the framework of the research project "ADRES-CONCEPT" a dataset was generated, which consists of active and reactive power as well as voltage values per phase. The measurement was carried out for one week in summer and one week in winter with a time step of 1 sec (1 sec RMS values) at 30 households in Upper-Austria.

These data are provided as one Matlab file with following structure format:

- Both matrices (Data.U and Data.PQ) stored in the structure are of the IEEE data type "single" (32 bits total, 8 bits for the exponent).
- Data.U is a matrix containing the voltage values (V) per phase and household.
  The number of rows is 1209600 (2 weeks x 7 days x 24 hours x 3600 seconds).
  The number of columns is 90 (3 phases x 30 households).

Household 1			Household 2			…	Household 30		
U_{L1N}	U_{L2N}	U_{L3N}	U_{L1N}	U_{L2N}	U_{L3N}	…	U_{L1N}	U_{L2N}	U_{L3N}

- Data.PQ is a matrix containing the active (W) and reactive power (Var) values per phase and household.
  The number of rows is 1209600 (2 weeks x 7 days x 24 hours x 3600 seconds).
  The number of columns is 180 (2 power values x 3 phases x 30 households).

Household 1						…	Household 30					
P_{L1N}	Q_{L1N}	P_{L2N}	Q_{L2N}	P_{L3N}	Q_{L3N}	…	P_{L1N}	Q_{L1N}	P_{L2N}	Q_{L2N}	P_{L3N}	Q_{L3N}

- Note that these values have not been measured synchronously (consecutive measurement in the different households). However, they have been posteriori "synchronised" so that all start on Monday 00:00:00 (GMT+1) (with correct weekday/non-weekday).

- The first half (row 1 up to 604800) of the dataset corresponds to the winter and the second half (row 604801 up to 1209600) to the summer.

Vienna University of Technology, 5th of March, 2012