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NEWGEN

New generation of HVDC insulation materials, cables and systems

D6.3 Project Data Management Plan

WP6 – Project Management and Coordination

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v0.1	30.1.2023	Template	Basic information	Mika Paajanen
v0.2	7.3.2023	Update	VTT's contributions	Ilkka Rytöluoto
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Contents

1. Executive summary

Project Data Management Plan (PDMP) includes a description of methodology and standards to be followed, what data sets are exploitable or made accessible for verification and re-use (Task 6.4). The PDMP will be a dynamic tool that is updated regularly throughout the project duration.

2. Introduction

NEWGEN partners are committed to the FAIR data principles, which mean findability, accessibility, interoperability, and reusability of data. The principle is as open as possible, as closed as necessary. There is no need to open all data, but opening the data of underlying publications is commonly required.

The Project Data Management Plan clarifies instructions and practicalities related to:

- Collection of personal data within the project and publicly on the website.
- Understanding the type of technical data that each partner in the project creates.
- How the data should be presented and stored in various data sharing platforms.
- Impact of GDPR to the created and stored data.

3. Data Management Plan

3.1 Personal data

Contact information within the consortium

A list of contact persons including their:

- Affiliation
- Names
- Emails
- Phone numbers (optional)
- Project WP responsibilities
- Shipping and mailing addresses of each partner organization

is stored in a confidential MS Word file that is placed in the project internal MS Teams channel.

Personal data related to meeting or workshop arrangements

Personal data may also be collected when meetings or workshops are arranged. If needed, the personal data for meeting or workshop arrangement may include:

- Name
- Affiliation
- Email
- Preferred choice of food and information on dietary restrictions.

The personal data is not shared with the consortium but is kept confidential by the partner organizing the meeting. The data is stored only at the organizing persons personal laptops and backups are created based on the organizations' practices.

NEWGEN project does not use or collect any personal data for research purposes. Personal data will be collected on a minimum level possible including details like name, organisation, title and contact details for project administrative tasks.

Personal data related to project communication videos

NEWGEN videos will include the appearance of some of the consortium members who will introduce and explain the role of their affiliated institutions in the project. In such cases, the consortium members will be presented in the movie with their names, affiliations, and positions in the project.

3.2 Technical data

Technical data will cover the main subject areas of the research within the project, including:

- Space charge mitigating additives and optimized extrusion for polymeric HVDC cables
- Characterization and condition monitoring techniques for HVDC insulation, cables and systems
- HVDC cable system life and reliability modelling, and impact for overall reliability and resilience of HVDC/-AC multilink systems

Main types of research data will include e.g. raw laboratory data, qualitative and quantitative data, digital image and video data, and different reports. The raw measurement data formats are instrument/software-specific. The main formats of data will be handwritten and digital (lab) notebooks, logs, excels, csv, tables, documents, and reports in the format of .xlsx, .docx, .pptx, MATLAB (.m, .mat), .csv, .pdf, and different image and video formats like png, jpeg, mp4 etc. Estimated volume of data will be moderate considering the main outputs are different report documents and laboratory data.

Datasets will be processed and analysed using relevant software. The data analysed in connection with the project work will be produced by the project, but the possibility of reuse of

any existing relevant open data will also be examined carefully. Quality control measures will be taken to maintain the accuracy of data during the project.

Research data will be collected and analyzed by each project partner by using mainly the following equipment and software:

VTT

Equipment: SEM, Jeol JSM-6360LV
Software: Semafore
Format of the summary: .tif / .jpeg, .pdf

Equipment: DSC, Netsch, DSC 204 F1 Phoenix
Software: Proteus
Format of the summary: .xlsx, .pdf

Equipment: WAXS/SAXS, X'Pert Powder, PANalytical
Software:
Format of the summary: MS Word / .pdf

Equipment: Leistritz ZSE MAXX 18 mm twin screw compounder
Software: Leistritz PLC software
Format of the summary: processing parameters/pdf; compounding table / formulations/parameters/ MS Word /pdf

Equipment: Leistritz ZSE MAXX 27 mm twin screw compounder
Software: Leistritz PLC software
Format of the summary: processing parameters/pdf; compounding table / formulations/parameters/ MS Word /pdf

Equipment: Brabender Plasticorder single screw extruder (19/25D) with flat die and chill roll; Drive unit Plastograph EC Plus
Software: Win Ext (CAN)
Format of the summary: processing parameters/ Word, rtf, Brabender format

Other documentation (e.g. material formulations): MS Word, Excel
Format of the summary: MS Word

UBO
Equipment: Novocontrol;
Software: WinDETA
Format of the summary: txt

Equipment: PEA space charge measuring system, TECHIMP;
Software: Matlab
Format of the summary: Matlab data file .mat, figures .fig/ .jpg, MS word, pdf.

Equipment: Conductivity measuring setup;
Software: Matlab
Format of the summary: Matlab data file .mat, figures .fig/ .jpg.

Other documentation: MS word, MS Excel, pdf .

MAI
Equipment: Agilent Infinity II LC
Software: Chemstation
Format of the summary: reporting as pdf

Equipment: Maillefer extruders NXW 60-20D, NXW80-20D, NXW200-24D
Software: Maillefer S7/TIA PLC software
Format of the summary: Database / CSV

Equipment: Maillefer LCU line control for extrusion line
Software: Maillefer S7/TIA PLC software
Format of the summary: Database / CSV

Other documentation: Process parameters and cable sample recipes
Format of the summary: MS Excel

TAG
Equipment: TECHIMP Aquila
Software: PD Pro software suite
Format of the summary: raw data in PQDIF (comtrade) format, reporting as PDF or MS Word, trends in CSV

Equipment: TECHIMP PEA
Software: LabView
Format of the summary: reporting as JPEG or PDF format

Equipment: TI Scada monitoring platform
Software: TECHIMP TI Scada web application
Format of the summary: Trends as CSV, Raw data as PQDIF (Comtrade)
Other documentation: Data export via OPC UA (IEC 62451), IEC 61850, IEC 60870-5-104

Equipment: ACS Angelantoni climatic chamber
Software: LabView
Format of the summary: reporting as JPEG, CSV or PDF

Equipment: platform for algorithms
Software: Python 3.X
Format of the summary: reporting as JPEG, CSV or PDF

Equipment: Agilent network Analyzer
Software: Labview
Format of the summary: reporting as JPEG, CSV or PDF

UT
Equipment: Bruker NMR 400 and 600
Software: TopSpin and MestreNova
Format of the summary: measurement parameters/pdf; / MS Word /pdf

Equipment: DSC
Software: Trios, reporting as word/pdf

Equipment: TGA
Software: Trios reporting as Word/ pdf

Equipment: Buchi high-pressure reactor
Software: XXX, reporting in lab book as word file and publications (reaction conditions)

Equipment: FTIR
Software: Opus, reporting as Word/pdf

Equipment: DLS
Software: Zetasizer, reporting as Word/pdf

Equipment: GPC
Software: PSS WinGPC, reporting in word/ pdf.

All data that is collected in the course of the project will be processed by standard software (MS Office, Origin, Endnote, etc.) in most cases or by a device-specific software and documented in a lab book (on paper) and electronically. All collected data will be archived in folders and saved on the file server of the University of Twente. The respective lab books will be scanned and saved on the servers as well. The results of the research will be published in peer-reviewed journals and presented on (international) conferences (oral presentation and posters of the group leader and the PhD students) to the scientific community. All data will be made available upon request by third parties. Request are either directed to corresponding authors of peer reviewed publications or to the secretary and/or head of the Sustainable Polymer Chemistry research group.

TAU
Equipment: Novocontrol;
Software: WinDETA
Format of the summary: txt

Equipment: Dielectric breakdown measuring system;
Software: LabView
Format of the summary: ascii files/.txt, figures .fig/ .jpg

Equipment: Conductivity measuring system;
Software: Matlab
Format of the summary: Matlab data file .mat, figures .fig/ .jpg.

Equipment: Thermally stimulated depolarization (TSDC), (or TSC/TSPC) measuring system;
Software: Matlab
Format of the summary: Matlab data file .mat, figures .fig/ .jp

Other documentation: MS word, MS Excel, pdf .

GD
Equipment and software: PC, openLCA, MS Excel, MS Word
Format of the summary: zolca files, excel tables and spreadsheets .xlsx, text files. docx

SGI
Equipment and software: PicoScope, PC Oscilloscope Software
Format of the summary: MS Excel

Equipment: Thorlabs Powermeter S121C with PM100USB
Software: Matlab
Format of the summary: Matlab data file .mat, figures .fig/ .jpg, MS word, pdf.

Equipment: Pulsed Electro-Acoustic measurement
Software: LabView
Format of the summary: .txt, data files/ .dat, figures/ .jpeg

Equipment: breakdown measurement system
Software: NA
Format of the summary: excel files/ .xlsx

Equipment: Conductivity measurement system
Software: LabView
Format of the summary: .txt, excel files/ .xlsx

Equipment: (oven) Espec PH-202

Equipment: (voltage generator) Glassman PS/LH400N7.0JY3
Software: LabView
Format of the summary: .txt or .lvm

Equipment: (current amplifier) SuperGrid G305, in-house solution
Software: LabView
Format of the summary: .lvm

Equipment: (space charge measurement) TechImp or in-house space charge measurement system
Software: LabView
Format of the summary: .txt

Processing software: Mathematica
Format of the summary: .nb, .txt

Graphing software: Origin
Format of the summary: .opj/.opju, .PNG

Other documentation: MS word, MS Excel, pdf .

CLI
Documentation software: MS word, MS excel , MS PPT, .pdf
Newsletter software: Mailchimp

TRI

Equipment and software: PC, Matlab-Simulink, Digsilent PowerFactory, Property software, MS Excel, MS Word
Format of the summary: MS word, MS Excel, pdf . data files/, data figures.

3.3 Data sharing platforms

3.3.1 Project MS Teams Channel

NEWGEN project MS Teams channel and data storage is hosted by VTT. Permission to access the NEWGEN MS Teams Channel is given only to persons who are employed by project partner and working in the NEWGEN project, when partner's responsible person (GA member) requests the access rights. During the project, the data will be used by the research consortium members. After the project is closed all requests for further use of data will be considered according to project GA and CA. Permission for data re-use will be granted providing there are no IPR or confidentiality issues involved.

3.3.2 Open access repositories

VTT

Parallel copies of the publications (gold or green open access), additional data sets and metadata will be made available for re-use by other researchers using VTT Pure repository.

UBO
Copies of open access publications and the relevant metadata will be available as open data to all researchers using UBO repository https://cris.unibo.it/.

MAI
Not in use

TAG
Copies of the collected data and peer-reviewed publications will be stored in the VTT MS Teams repositories and available for all projects members. All supplementary materials will be stored on internal servers of TAG - Altanova group.

UT
Copies of the peer-reviewed publications and the metadata linked to them will be stored in the 4.TUResearchData public repository https://data.4tu.nl/info/en/.

TAU
Parallel copies of the publications (gold or green open access), additional data sets and metadata will be made available for re-use by other researchers using TuniCris repository of TAU.

GD
Copies of the collected LCA inventories will be stored in the VTT MS Teams repositories and available for all projects members. All supplementary materials will be stored on internal servers of GreenDelta, in an owncloud system “Share GreenDelta”.

SGI
Copies of the collected data and peer-reviewed publications will be stored in the VTT MS Teams repositories and available for all projects members. All supplementary materials will be stored on internal servers of SuperGrid Institute.

CLI
Copies of the presentations with the advisory board meeting, images for the communication material and newsletter content will be stored in the VTT MS Teams repositories and available for all projects members. All supplementary materials will be stored on internal servers of CLIC Innovation.

TRI
Copies of the peer-reviewed publications will be made available for re-use by all projects members. All supplementary materials will be stored on internal servers of “Terna”.

3.3.3 Project Web-site

Project website at www.newgen-project.eu includes public information of the project including:

- Description of the project concept and impact.
- Description of the consortium and partner organizations.
- News about events and newsletters.
- Public deliverables.
- Links to publications of project results.
- Contact information including the name and email of the coordinator.

The NEWGEN website uses basic cookies to help the user to navigate efficiently and perform certain functions. Detailed information about all cookies under each consent category are clearly presented to the website users. The cookies that are categorized as "Necessary" are stored on the user’s browser as they are essential for enabling the basic functionalities of the site. These cookies do not collect or store any personal information of the site visitors. Third-party analytical cookies for following up the site metrics (number of visitors, traffic source etc.) are only used with the prior consent of the user. The website will later include links to the social media channels of the NEWGEN project (including LinkedIn, YouTube, ResearchGate, and Twitter), which may lead to some information of the browsing visitor to be transferred to this third party. The website users will be informed about this via a disclaimer on the webpage.

3.4 GDPR aspects

NEWGEN-project does not use personal data as a research subject, neither does the project collect any personal information outside the data mentioned in the sections above. It has not been necessary to create informed consent procedure or related documents. Data protection methods related to handling the technical data are simple and do not necessitate to create thorough data protection analysis.

4. Funding statement

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA) . Neither the European Union nor the granting authority can be held responsible for them.

5. Appendices

None.