BD4NRG
Big Data for Next Generation Energy

D10.4 BD4NRG Dissemination, Communication, Stakeholder Engagement, Standardisation and Data Management Handling Report (Period I)

WP10 – Dissemination, Exploitation and Standardisation

June 2022

www.bd4nrg.eu

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Grant Agreement Number: 872613 Acronym: BD4NRG

Full Title	Big Data for Next Generation Energy		
Topic	DT-ICT-11-2019 Big data solutions for energy		
Funding scheme	H2020- IA: Innovation Action		
Start Date	January 2021	Duration	36
Project URL	http//www.bd4nrg.eu		
Project Coordinator	ENG		
Deliverable	D10.4 BD4NRG Dissemination, Communication, Stakeholder Engagement, Standardisation and Data Management Handling Report (Period I)		
Work Package	WP10 – Dissemination, Exploitation and Standardisation		
Delivery Month (DoA)	M18	Version	1
Actual Delivery Date	30/06/2022		
Nature	Report	Dissemination Level	Public
Lead Beneficiary	HOLISTIC		
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Keywords	Communication, Disseminations, Stakeholders, Standardisation, Data Management		

Preface

BD4NRG focuses on addressing emerging challenges in big data management for energy sector with an innovative open holistic solution for smart grid-tailored, near real time, energy-specific and AI-based open Big Data Analytics modular framework. The vision is to deliver holistic services for techno-economic optimal management of Electric Power and Energy Systems value chain. Services range from optimal risk assessment for energy efficiency investments planning, to optimized management of grid and non-grid owned assets, improved efficiency, and reliability of electricity networks operation, while at the same time contributing to achieve fair energy prices to the consumers and laying the foundations for an EU-level energy-tailored data sharing economy. The BD4NRG Toolbox will be implemented and validated in real-life pilots in 12 large-scale demo sites across 10 countries for:

- Increasing the efficiency and reliability of the electricity network BD-4-NET
- Optimising the management of assets connected to the grid BD-4-DER
- De-risking investments in energy efficiency and increasing the efficiency and comfort of buildings BD-4-ENEF

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Who We Are

	Participant Name	Short Name	Country Code	Logo
1	ENGINEERING – INGEGNERIA INFORMATICA SPA	**ENG**	IT	
2	NATIONAL TECHNICAL UNIVERSITY OF ATHENS	**NTUA**	GR	
3	RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN	**RWTH**	DE	
4	EUROPEAN DYNAMICS LUXEMBOURG SA	**ED**	LU	
5	INTERNATIONAL DATA SPACES EV	**IDSA**	DE	
6	EUROPEAN NETWORK OF TRANSMISSION SYSTEM OPERATORS FOR ELECTRICITY AISBL	**ENTSO-E**	BE	
7	PANEPISTIMIO DYTIKIS ATTIKIS	**UNIWA**	GR	
8	ATOS SPAIN SA	**ATOS**	ES	
9	FUNDACION CARTIF	**CARTIF**	ES	
10	UNIVERZA V LJUBLJANI	**UNILJ**	SL	
11	ENEL X SRL	**ENELX**	IT	
12	REN - REDE ELECTRICA NACIONAL SA	**REN**	PT	
13	CENTRO DE INVESTIGACAO EM ENERGIA REN - STATE GRID SA	**RDN**	PT	
14	UNINOVA-INSTITUTO DE DESENVOLVIMENTO DE NOVAS TECNOLOGIASASSOCIACAO	**UNINOVA**	PT	
15	ENERCOUTIM - ASSOCIACAO EMPRESARIALDE ENERGIA SOLAR DE ALCOUTIM	**ENERC**	PT	
16	FIWARE FOUNDATION EV	**FIWARE**	DE	
17	CENTRICA BUSINESS SOLUTIONS BELGIUM	**CENTRICA**	BE	
18	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO	**TNO**	NL	
19	ASM TERNI SPA	**ASM**	IT	

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	Participant Name	Short Name	Country Code	Logo
20	VIDES INVESTICIJU FONDS SIA	**LEIF**	LV	
21	COMSENSUS, KOMUNIKACIJE IN SENZORIKA, DOO	**COMSENSUS**	SL	
22	HOLISTIC IKE	**HOLISTIC**	GR	
23	INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM	**IMEC**	BE	
24	TERRASIGNA SRL	**TS**	RO	
25	UBIMET GMBH	**UBIMET**	AT	
26	ELEKTRO LJUBLJANA PODJETJE ZADISTRIBUCIJO ELEKTRICNE ENERGIJE D.D.	**EKL**	SL	
27	BORZEN, OPERATER TRGA Z ELEKTRIKO, D.O.O.	**BORZEN**	SL	
28	AJUNTAMIENTO DE SANT CUGAT DEL VALLES	**AJSCV**	ES	
29	ELES, D.O.O., SISTEMSKI OPERATER PRENOSNEGA ELEKTROENERGETSKEGA OMREŽJA	**ELES**	SL	
30	E-LEX - STUDIO LEGALE	**ELEX**	IT	
31	OSMANGAZI ELEKTRIK DAGITIM ANONIM SIRKETI	**OEDAS**	TR	
32	VEOLIA SERVICIOS LECAM SOCIEDAD ANONIMA UNIPERSONAL	**VEOLIA**	ES	
33	STICHTING EG	**EGI**	NL	
34	CINTECH SOLUTIONS LTD	**CN**	CY	
35	EMOTION SRL	**EMOT**	IT	

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Executive Summary

This report is the first of the two reporting deliverables (D10.4 and D10.8) under WP10, after deliverable D10.1 Dissemination and Communication Strategy – Stakeholder Engagement Plan, in which described the initial approach to be followed for Dissemination and Communication strategy and stakeholder engagement plan. In D10.1, a clear definition of the activities to be foreseen has been described giving all the information required for successful dissemination and communication activities. Moreover, it includes information from the stakeholder and building ecosystem activities along with the standardisation and data management handling of the above-mentioned activities.

Therefore, the purpose of this report for the first half of the project (Period I), D10.4 is to describe goals, updates, analysis and assessment of the progress until M18 based on D10.1 and furthermore to refine a new strategy with additional actions, and complementary activities which have to be performed for an effective creation of the project awareness.

A remarkable effort has been noticed on the achievement of communication and dissemination targets. Yet, some specific dissemination activities require more attention during the second half of the project where leveraging the project's results consolidation is expected. Therefore, activities such as webinars, industrial events, participation in standardisation associations and other community associations, organisation of special sessions will have to be improved.

The same applies for the communication activities and material which so far has been focused on presenting the project to a wider audience with the use of introductory material. Although a strong e-pressence has been established, more effort will be given in the second half of the project taking into account the technical results consolidation.

Stakeholder and ecosystem building activities lead to the establishment of a remarkable network of synergies (projects and initiatives) and stakeholders' network. Some of the KPIs have been surpassed but this is a living activity which will continue being improved.

The standardisation and clustering activities have focused on identifying the relevant standards and their respective standardisation committees, where BD4NRG could contribute. The goal for the second period of the project will be to establish communication channels with those standardisation committees and contribute to (at least) ten standards.

Finally, it should be noted that all these activities are following the D1.2 Data Management Plan for the handling of all relevant data, and the consequent publication, storage, processing and management for dissemination and communication activities.

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1 Introduction

1.1 Purpose of the document

The goal of *WP10 Dissemination, Exploitation and Standardisation* is the developing a concrete strategy to ensure high visibility of BD4NRG's outcomes and maximise its impact. Its impact is to reach the relevant target groups to actively engage them via relevant media, activities etc.

Dissemination, Exploitation and Standardisation activities are led by ENG with the support of HOLISTIC, IDSA and CN throughout the whole duration of the project. However, all partners are actively engaged for raising awareness and spreading knowledge, results and outcomes derived from BD4NRG, so by participating in appropriately identified communication and dissemination activities while leveraging their existing channels and network as well.

This document is the first version report of BD4NRG dissemination, communication, standardization, stakeholder engagement and data management handling activities and covers actions done in the first half period of the project (M1-M18). It acts as progress report of *Task 10.1 Dissemination and Communication Activities*, *Task 10.2 Standardisation and Clustering Activities* and *Task 10.3 Community and Ecosystem Building*.

So far, two deliverables under WP10, already submitted, are consider as the basis for the communication and dissemination strategy. The *D10.1 Dissemination and Communication Strategy-Stakeholder Engagement Plan* (M3) sets the ground for planned approach for dissemination and communication activities (target groups, key messages, project branding and communication and dissemination strategy) and consequently is a tool for BD4NRG partners for their dissemination and communication activities. The *D10.2 Project Website and other digital communication* (M6) presents the early stages material and planning material for the communication strategy.

On the other hand, a communication and dissemination plan needs to consider how to leverage on information sharing and how to incorporate open access and open source approaches that best meet the needs of the project and its consortium: "as open as possible, as closed as necessary"; and open source strategy is not necessarily the default; hence why there is the *D1.2 Data Management Plan* that takes these aspects into account. The *D1.2 Data Management Plan (M6)* outlines the planned approach regarding relevant processes, methodologies, tools and repositories for handling all associated data occurred during the project lifetime.

Apart from activities and actions done during the first half of the project (M1-M18), next steps for the second half of the project (M18-M36) are presented aiming at the successful creation or raising awareness and ensuring a higher BD4NRG impact.

All the activities are following the phases of communication and dissemination which have been identified and planned in D10.1:

Phase I: Raise Awareness (M1-12)

Phase II: Diffuse Knowledge (M13-M24)

Phase III: Communication Culmination (M25-M30)

Phase IV: Post-project Communication preparation (M30- M36 and beyond)

The first half period of the project focused on raising awareness to different target groups and diffuse

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knowledge. Main activities were aiming to the:

- Establishing of a strong project branding.
- Developing of the project website with regular updates on content.
- Establishing of social media presence with regular update of project activities and promotion of project outcomes and events.
- Continuous update of website's sections for news and events related to project and relevant opportunities.
- Dissemination of project outcomes, project events and relevant content.
- Preparation of newsletters/press releases to promote the project launch and significant events.
- Preparation of informational material (brochure, poster, banner etc.).
- Preparation of the stakeholder engagement plan.

As the time of submission of D10.4 is in the first months of *Phase II: Diffuse knowledge (M13-M24*), collectively all the above-mentioned actions focused on the project promotion (technical scope, pilots' vision, impacts etc.). Once more tangible results are available, the attention is shifted to ensure that knowledge is diffused in various ways (more technical oriented material-infographics, brochures, posters etc.) which consequently ensure their effective exploitation and replication.

It should be noted that the outcomes produced by BD4NRG are following the Data Management Plan (DMP) as this has been prepared in *D1.2 BD4NRG Data Management Plan* (M6). Therefore, all activities done for data management handling, sharing or curation and preservation of dissemination and communication material and data until M18 will be reported in this deliverable. This includes descriptions of the platforms and repositories chosen for the BD4NRG data storage and dissemination activities and web-based publication platforms.

1.2 Structure of the document

Apart from the introductory section, the rest of the document is structured as follows:

- Section 2: Dissemination activities including participation in events, organization of events, publications and conferences participation
- Section 3: Communication activities including informational material, project website, e-presence and social media.
- Section 4: Stakeholder and Ecosystem Planning deals with the links with other projects, initiatives and stakeholders for a continuous knowledge exchange and the creation of a project ecosystem.
- Section 5: Standardisation and clustering activities including the identifies standards and relevant standardisation committees that could have an impact on the project.
- Section 6: Information of data archiving, publishing management and handling.

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2 Dissemination Activities

Dissemination is related with public communication of project outcomes. BD4NRG has a significant amount of dissemination activities to ensure a widely spread of the project vision and increase awareness. BD4NRG partners are committed throughout the project to mobilise the appropriate stakeholders in order to multiply the effects of dissemination and exploitation activities and maximise the project's impact based on already identified target audience (D10.1). Considering several mechanisms and KPIs as defined in GA (Table 1), several actions have already been performed.

In total, 24 partners' participations were reported mainly in events, special sessions, conferences, workshops and activities organised jointly with other H2020 projects. More information can be found in Appendix I.

Table 1 summarises the dissemination activities as regards the monitoring indicators requirements until the end of the project lifetime and sub-sections below analyse in more details the dissemination activities per type. Whatever is not listed in Table 1 is not categorised under the main categories but in "other" events (i.e. replication opportunities meetings, webinars) and is as significant as the grouped events.

Table 1: Dissemination activities monitoring

Type	KPIs and Monitoring Indicators	Achieved by M18
Exhibition stands in the industry innovation events	>5	1
Publication in highly ranked international journals and magazines	> 3	3
Industry Community Associations	> 2	2
Contributions in international peer reviewed conferences	> 8	5 conferences 8 workshops
Organization of special sessions	>2	2

2.1 Exhibition stands in the industry innovation events

In the first period of the BD4NRG project strong limitations (covid-19 travelling restrictions, online events rather than physical ones) have been met in terms of participation to industry events. Moreover, it should be taken into account that the first period of the project, there were not tangible results to showcase in exhibition stands, hence this activity is more suitable at a later stage of the project.

Anyhow, the project has been included in the Europe ENLIT projects virtual zone in the 2021 Milan edition and preparation has been started so as the project to physically participate with a stand for the 2022 edition in Frankfurt.

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2.2 Journal Publications

The targeted number of journal publications has been reached and expected to be surpassed as in the 2nd half of the project expected to have a number of tangible outcomes are expected to become publicly available. In total, three (3) scientific publications, related to the project, have been published in scientific journals. The list of publications is presented in detail below.

- Vangelis Marinakis, Themistoklis Koutsellis, Alexandros Nikas and Haris Doukas. (2021) AI and Data Democratisation for Intelligent Energy Management, https://doi.org/10.3390/en14144341
- Elissaios Sarmas, Evangelos Spiliotis, Vangelis Marinakis, Georgios Tzanes, John Kaldellis, Haris Doukas, (2022) ML-based energy management of water pumping systems for the application of peak shaving in small-scale islands, https://doi.org/10.1016/j.scs.2022.103873
- Elissaios Sarmas, Evangelos Spiliotis, Vangelis Marinakis, Themistoklis Koutselis, Haris Doukas A meta-learning classification model for supporting decisions on energy efficiency investments, https://doi.org/10.1016/j.enbuild.2022.111836

2.3 Industry Community Associations

BD4NRG partners have already been involved in activities organised by industry community associations. Although the targeted number has been reached, partner will focus on expanding the network and participating in activities facilitated by various associations such as Big Data Europe, Sustainable Europe Research Institute and so on.

- Data Week 2021 co-organised by BDVA/DAIRO and EUHubs4Data project, Data4Energy: Big data fuelled energy transition, 27 May 2021, Online (ENERC)
- Data Week 2022 co-organised by BDVA/DAIRO and EUHubs4Data project, 1 June, 2022, Online (ENG & NTUA)

2.4 Participation to Conferences and workshops

Already withing the 1st period of the project, partners actively spread the word of the BD4NRG vision and approach and engaged with the community by participating in 5 conferences and 8 workshops have been reported.

- BRIDGE General Assembly, 2-4 March 2021, Online (ENG & ENERC)
- IDSA Summit 2021, How Data Spaces can be Built: Evolving Data Spaces in the European Energy Sector, 22 June 2021, Online (ENG)
- 12th International Conference on Information, Intelligence, Systems and Applications (IISA 2021), 12 – 14 July 2021, Online (NTUA)
- 31st European Conference on Operational Research-EURO2021 Athens, 11-14 July 2021, Online (NTUA & CARTIF)
- Next Generation IOT - Workshop on IoT and Edge Computing Research and Standardisation Convergence, 13-14 September 2021, Online (ENERC)
- IEEE SmartGridComm 2021 Workshop “Artificial and Human Intelligence for Community-empowered Sustainable Energy Systems”, 27 October 2021, Online (ENG & NTUA)

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- International Webinar on Smart Grid & Green Energy Systems & Environmental Engineering & Sustainable Technologies, 15 November 2021, Online (EMOT)
- OPEN DEI - CEF Operational Digital Platforms for Energy and Mobility Sectors: Operational Digital Platforms to Booster the Digitalization of European Networks, 3 March 2022, Vienna (ATOS)
- Open DEI - WG3 -Open Call Joint Dissemination Event, 17 March, 2022, Online (CN)
- Workshop: Data Spaces & Semantic Interoperability - TRUSTS (trusts-data.eu), 3 June 2022, Online (TNO)

2.5 Organization of special sessions

- A Special Session namely "Big Data Analytics in the Energy Sector" based on the research activities of the H2020 BD4NRG and MATRYCS projects, took place during the 12th International Conference on Information, Intelligence, Systems and Applications (IISA 2021), held in July 12 – 14, 2021, in Chania, Crete, Greece. Although this session was held online, 5 papers were presented and discussed. For more information, please refer here.
- The BD4NRG project and the EU GCC Clean Energy Technology Network, with the support of WEC Greece and Build Back Better GR organised the online event Digital transformation in the Energy Sector. The online event took place on Tuesday 16 February 2021 aiming to provide recent advancement and successful EU case studies of such digital transformations, in the context of energy grids, communities and islands. For more information, please refer here.

2.6 Dissemination plan for Period II

Considering the achievements of the first reporting period, there are targets that have been already achieved or nearly achieved. Still since more tangible outcomes are expected in the second half of the project, a marked increase of dissemination activities is expected by all BD4NRG partners. It is very important for the promotion of the project and its results, to have as much presence as possible in various events. The following table presents examples where targeted effort will be made for upcoming dissemination activities.

Table 2: Dissemination activities monitoring until M36

Type	Description	KPIs and Monitoring Indicators	Target by M36
Exhibition stands in the industry innovation events	Enlit Europe 2022, European Big Data Value Forum 2022; BDV PPP Meetup 2022; Big Data Europe, Energy Community; Sustainable Europe Research Institute; European Sustainable Energy Week 2022; ENLIT Europe 2022; Innogrid 2022	>5	>4
Publication in highly ranked international journals and magazines	**Big Data:** Big Data Research, Journal of Big Data, International Journal of Big Data Intelligence, Big Data and Information Analytics; Energy: IEEE Transactions on Smart Grid, IEEE Transactions on	> 3	> 1

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Type	Description	KPIs and Monitoring Indicators	Target by M36
	Power Systems, IEEE Transactions on Power Delivery, Energy, Energy Policy; ICT/Cloud: ACM Computer Communication Review, IEEE Transactions on Network and Service Management, Transactions on Communications, Elsevier Computer Networks.		
Industry Community Associations	Big Data Value Association; Big Data Europe; AI4EU, Energy Community; Sustainable Europe Research Institute; ETIP SNET WG4	> 2	> 1
Contributions in international peer reviewed conferences	**Big Data:** Big Data Research, Journal of Big Data, International Journal of Big Data Intelligence, Big Data and Information Analytics; Energy: IEEE Transactions on Smart Grid, IEEE Transactions on Power Systems, IEEE Transactions on Power Delivery, Energy, Energy Policy; ICT/Cloud: ACM Computer Communication Review, IEEE Transactions on Network and Service Management, Transactions on Communications, Elsevier Computer Networks.	> 8	Achieved
Organization of special sessions	Elsevier Sustainable Energy, Grids and Networks (Open Access); Springer, Journal of Cloud Computing (Open Access)	>2	> 1

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3 Communication Activities

The 1st reporting period of the project's Communication activities includes activities from *Phase I: Raise Awareness* and *Phase II: Diffuse Knowledge* as reported in GA. There is also a *Phase IV: Post-project Communication preparation* (M30-M36 and beyond) which focuses on wrapping up all communication activities, finalisation of any material and preparation of the post-project impact.

Activities during the 1st half of the project focused on:

- Designing of project branding (logo, project identity, informational material, templates etc.)
- Designing and development of project website
- Establishing of e-presence in social media
- Introducing special part in website for news and event related to the project but not limited.
- Preparing of Newsletters and Press Releases
- Regular update of project website and informational materials

It should be noted that the communication strategy focused mainly on the enhancement of digital presence of the project due to the restrictions on physical events and meetings during COVID-19. Physical activities have been suspended for a later stage; there were limited possibilities for participation to physical events; still informational material is leveraged to support such participation especially looking forward to planned events during the 2nd half of the project. Therefore, all communication material of the 1st project period has been adjusted to a more digital way and several actions have been taken to further boost project impact in digital space (i.e institutional presentation, infographics, GIFs).

Table 3Table 3: Monitoring and evaluation of Communication activities below lists all the communication activities from M1-M18, the KPIs to be achieved by the end of the project and their status along with information regarding the availability sources of all material.

Table 3: Monitoring and evaluation of Communication activities

Type		Link	KPIs & Monitoring Indicators	Achieved by M18
Website		https://bd4nrg.eu/	1	☑
Social Media	Twitter	@Bd4Nrg	≥ 20	33 Posts, 144 Followers
	LinkedIn	BD4NRG		15 Posts, 133 Followers
	YouTube	BD4NRG H2020 project	n/a	1 Video, 62 views
Brochure		Link	4	1
Poster		Link	≥ 4	1
Video		Link	≥ 4	1

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Type	Link	KPIs & Monitoring Indicators	Achieved by M18
Newsletter	Link	≥ 4	1
Press releases	-	≥ 2	-
Banner	Project's Teams Repository	1+1	1
Institutional ppt	Link		1
Infographics	Link		n/a
GIFs	Project's Teams Repository		n/a

In the following sections, details regarding the communication activities are reported.

3.1 BD4NRG Website

The development of the BD4NRG website (www.bd4nrg.eu) was significant for the effective promotion of actions in the framework of BD4NRG. It contributes to raising awareness within the communities of the identified target groups' while creating interest and attracting potential contributions to the overall effort. The website of BD4NRG has been delivered by M3 (earlier than the MS1: Web and social media release) and it is continuously monitored and updated when necessary.

While creating the website, due care was taken to carefully define the role of the website in the communication mix for the project as well as the target audiences and appropriate content to meet their needs. More information can be found in *D10.2 Project Website and other Digital Communication*.

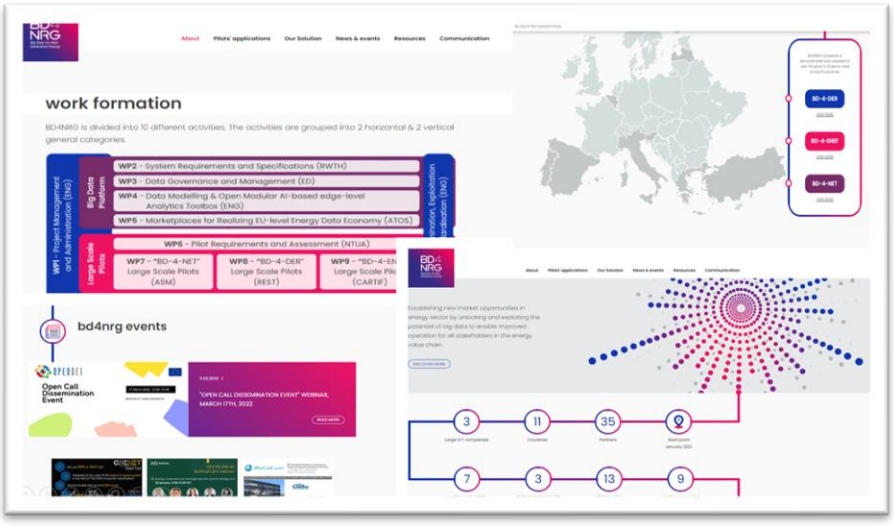

Figure 1: BD4NRG Website

A dedicated tab for news and events has been created with the website which works as the projects

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blog and include information from partners dissemination activities, announcements for BD4NRG events or other relevant events, announcements of outcomes and any other useful information.

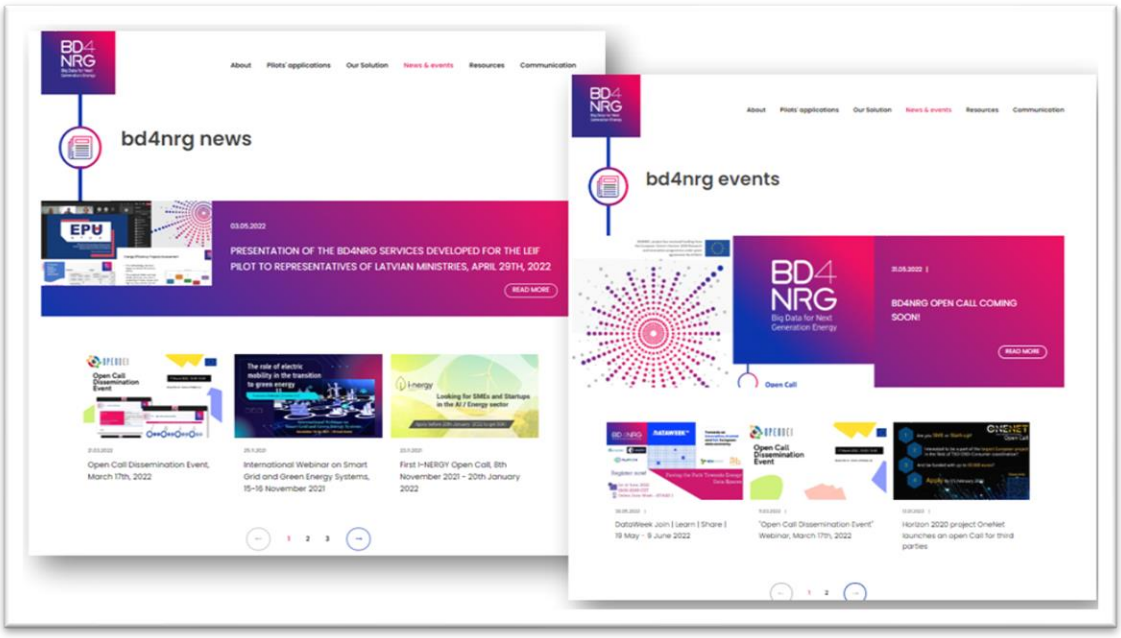

Figure 2: BD4NRG Project blog for news and events

It should be noted that another dedicated tab has been included in the BD4NRG website for the BD4NRG Open call sub domain which redirects the users to the BD4NRG Open call portal that is especially being developed for the BD4NRG Open Call and serves as a platform, where applicants will find all necessary documentation and information for the aforementioned Call and submit their proposals.

According to Google Analytics, up to June 2022 the website has 6670 pageviews and 623 unique visitors, while the BD4NRG materials have been accessed 483 times. Moreover, BD4NRG blog with news and events has been assessed 189 times.

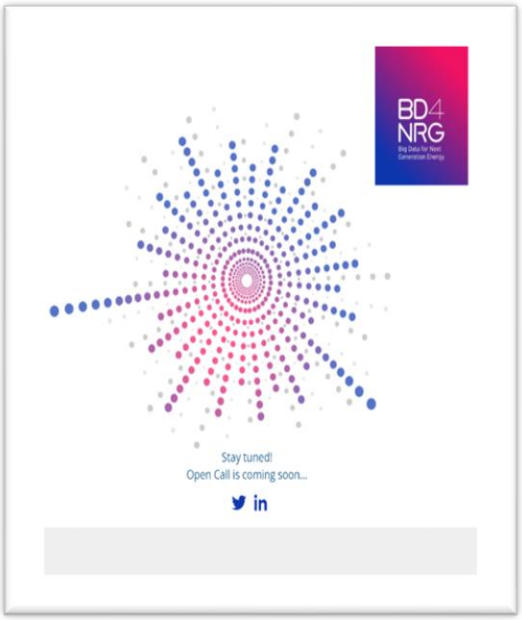

Figure 3: Open Call portal

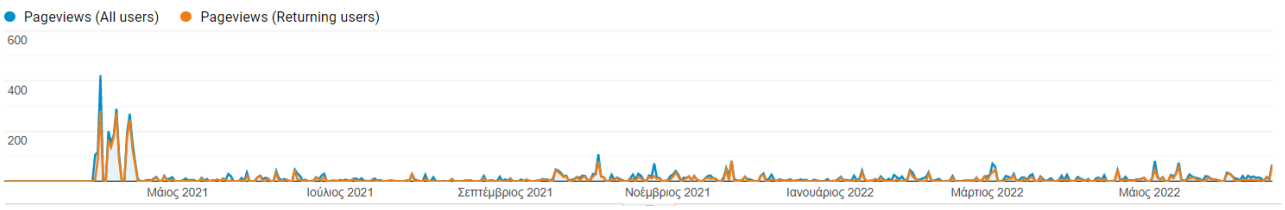

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Figure 4: Users distribution over time

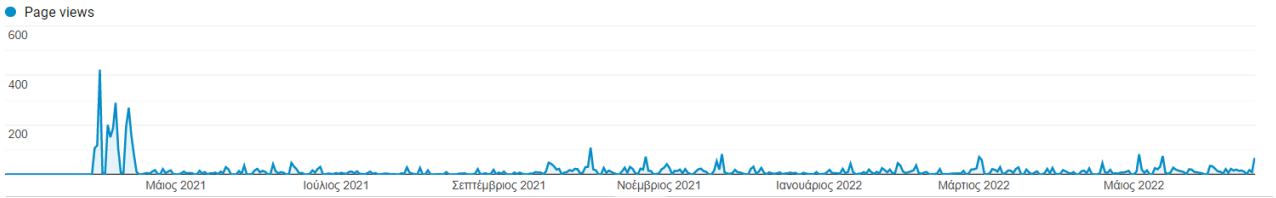

Figure 5: Page views distribution over time

3.2 E-presence and Social Media

In order to further promote the communication and dissemination activities, multiple social media accounts have been created on several platforms from the very beginning of the project:

- Twitter: @Bd4Nrg
- LinkedIn: BD4NRG
- YouTube: BD4NRG H2020 project

As of June 2022, Twitter account has 144 followers, 34 posts and 625 engagements (total number of times a user interacted). LinkedIn account has 133 followers, 15 posts and 438 engagements. On YouTube channel, the first video of the project currently has been formatted, cultivating 62 views.

An increase in user engagement in social media accounts is expected once more tangible results are available; particularly those referring to technological advancements and pilots' activities.

Newsletters & Press Releases

The online presence of the project is further enhanced by the circulation of a regular newsletter that contain news and upcoming activities and initiatives. The intention is to foster and grow an online community by delivering valuable content to project subscribers and to motivate them to stay connected and engaged. Periodic newsletters development, publication and distribution is under the scope of the communication plan, but this can be adjusted according to the needs of the project. To this end and since more tangible outcomes are expected in the second half of the project, a marked increase of newsletters releases is expected. Thus far, one public newsletter has been published in September 2021 which introduce the project launch and initial activities from BD4NRG partners.

Moreover, the scope is to send press releases once there is a need for specialised and key project events or milestones (i.e Open Call, specialised events, etc.). Therefore, an upcoming Press release is expected with the announcement of the BD4NRG Open Call.

Video

The first BD4NRG video provides an overview of the project scope, vision and expected results. Additional videos will be created once the project achieves further results. The scope is to promote not only BD4NRG technical advancements (i.e BD4RG Marketplace) but pilots' achievements as well.

Infographics

Infographics are a reliable means to provide a quick overview of a topic and raise awareness about the project's issues. At this stage such infographics have been created to give information about the

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general context of big data and how BD4NRG will be able to help manage them. So far 3 dedicated infographics have been prepared targeted to the three pillars of pilots (BR4NET, BD4DER, BD4ENEF).

GIFs

Although not originally foreseen, a series of 12 GIFS is produced in relation to pilots' goal. The GIFs have a proven value in the communication strategy while it states a clear message to a wider audience. It is expected that more GIFs will be created in the future to present project results such as the BD4NRG Marketplace.

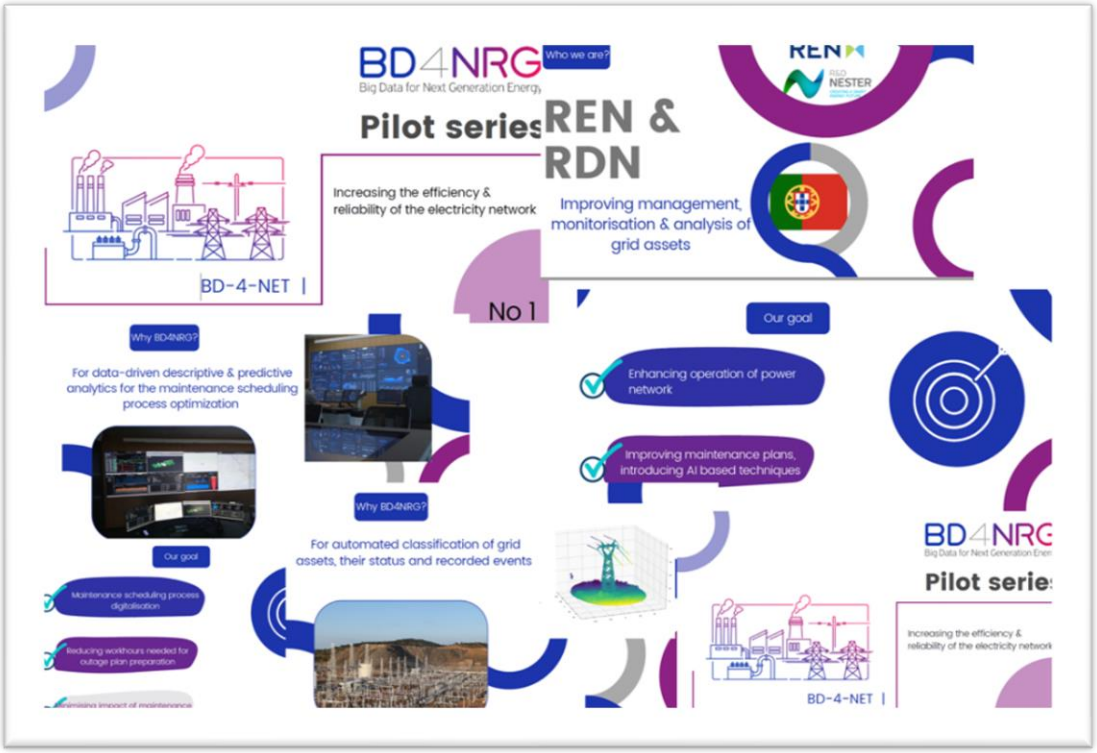

Figure 6: BD4NRG Set of pilot GIFs

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3.3 Other communication material

Banner

From the beginning of the project, 1 banner has been created in order to capture in the best way the first intention in internal and external events.

Digital versions of social media banners were also developed and used in social media accounts. More information can be found in *D10.2 Project Website and other Digital Communication*.

As the project progresses, it is possible that additional banners will be developed for specific events, or upon partner request and of course for the promotion of the BD4NRG technology solution.

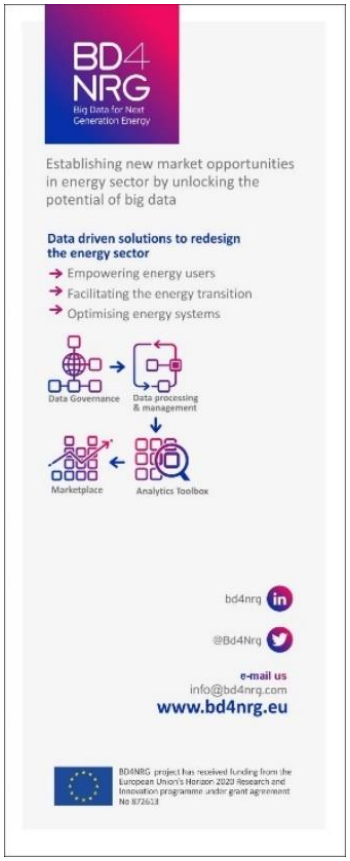

Figure 7: BD4NRG Stand-up Banner

Brochure

For further promotion of the BD4NRG, the first has already been crated which briefly describes the BD4NRG project and its main objectives, presents the project's participants and information about the social media where interested parties can follow and be informed about the progress of the project.

Figure 8: 1st BD4NRG Brochure

Poster

From the beginning of the project, it was quite important to create an original poster that could help on the general introduction of the project to an even greater degree especially in workshops and

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conferences. For this purpose, an original poster was created which has been formatted in the visual context of the project and gives more information about the project, what are its methodology and outcomes along with the expected impacts. Moreover, it included general information about` who are participating in the project and mentioned all the accounts that the interested parties can be informed for the project, such as the website and its social media. The poster is expected to be used in upcoming physical events but not limited.

Institutional presentation

Since the early stage of the project and due to the necessity of online participation in events, an institutional presentation has been provided which works as a basis for BD4NRG presentations in events and exhibitions. The goal of this presentation is to provide information regarding the project set up (partner, workplan, time plan) along with information on objectives, impacts and results. This presentation will be updated regularly, and especially once tangible results are available to depict project status and summarise all activities and outcomes.

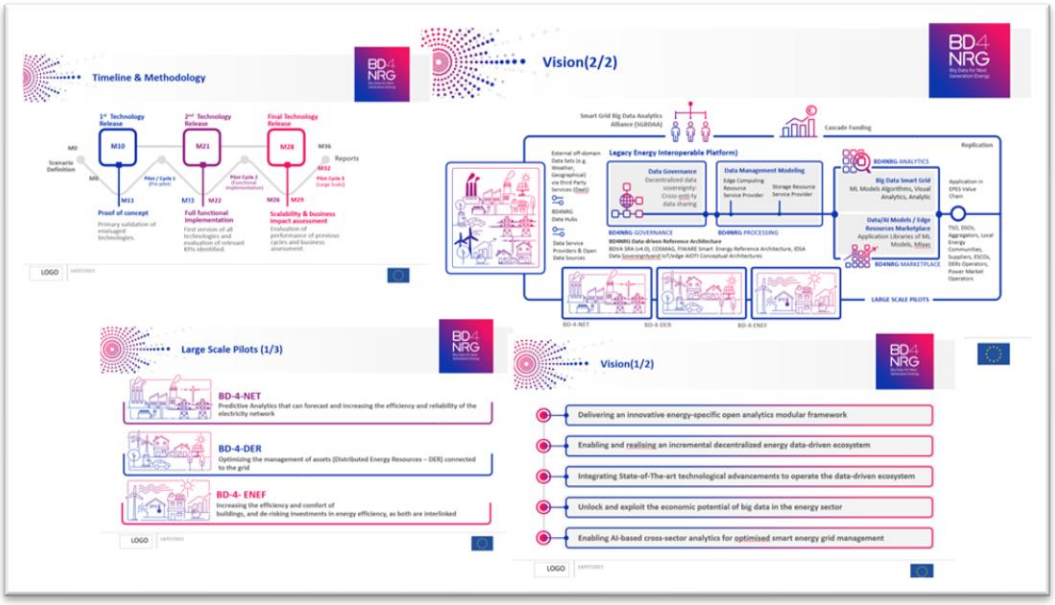

Figure 9: BD4NRG Institutional presentation

3.4 Communication plan for Period II

The communication activities of the project proceeded according to the original plan set by *D10.1 Dissemination and Communication Strategy-Stakeholder Engagement Plan*. In order to set up the plan for the second reporting period, the communication KPIs must be taken into account. Although there is significant effort for development of communication material and establishment of project identity for the wider audience, it is necessary to set further activities aiming to promote the project to an even greater degree, not only to achieve the initial goals but to exceed them as well. This will be further improved with the participation in more physical events.

It should be noted that due to restrictions posed by COVID-19 measures in relation to participation to physical events, several actions were taken in order to increase the digital communication impact (i.e., GIF preparation).

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In the second period, new videos will be created in which the project pilots will be presented in more detail (3 in total, 1 per pilots' group), as well as the results that will have been extracted from the BD4NRG solution for the big data management in the energy sector. The same applies for a set of brochures and posters.

Regarding Newsletters and Press releases, an increase in the publishing number is expected as there will be a more frequent need for communicating project's achievements due to the fact that more results will come out soon and more frequent updates will occur. BD4NRG will continue to produce newsletters and press releases at key project milestones and achievements. The first BD4NRG Press Release is expected to be done before the end of June 2022 for the announcement of the BD4NRG Open Call.

Finally, communication material such as infographics, banners, and institutional presentation will be updated to present the results of the project as these become available and will work as a follow-up of the already prepared material.

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4 Stakeholder and Ecosystem

The aim of *Task 10.3 Community and Ecosystem Building* is to create links with other projects and initiatives for a continuous knowledge exchange.

BD4NRG is working since the early stages of the project in order to create as many links as possible with other projects and initiatives (BRIDGE, BDVA, etc.) that could both benefit from BD4NRG findings and/or from which BD4NRG could benefit. The approach followed by the project can be described in four phases as explained in Figure 10.

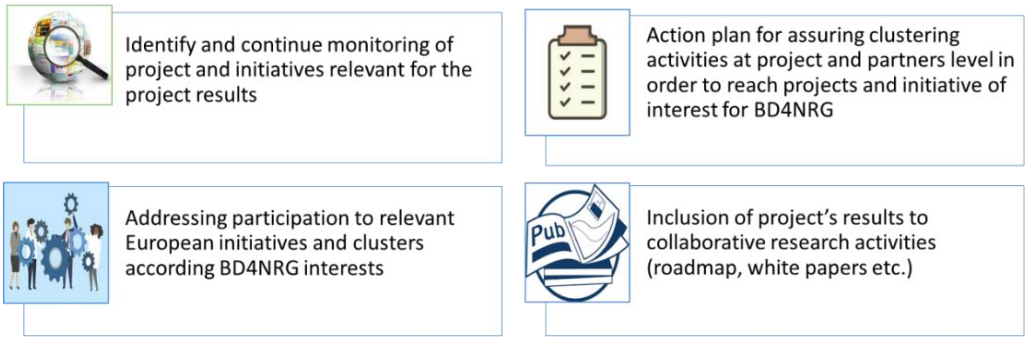

Figure 10: Community and Ecosystem Building approach

The first period sees BD4NRG committed to analyse the main relevant stakeholders, project and initiatives around the project interests and topics, understanding, leveraging on partners interest and visibility, the best ways to achieve stakeholders as well as to share knowledge and experiences with relevant projects and initiatives. The action plan is constantly updated for addressing the potential synergy opportunities. Besides specific project partners/people have been participating to EU initiatives and clusters, spreading the knowledge of the project results and acting as link between BD4NRG project and the identified Initiatives.

Figure 11 presents the links already created with projects and EU initiatives considering as well some relevant EU initiatives / association part of the consortium (IDSA, ENTSO-E, EGI and FIWARE).

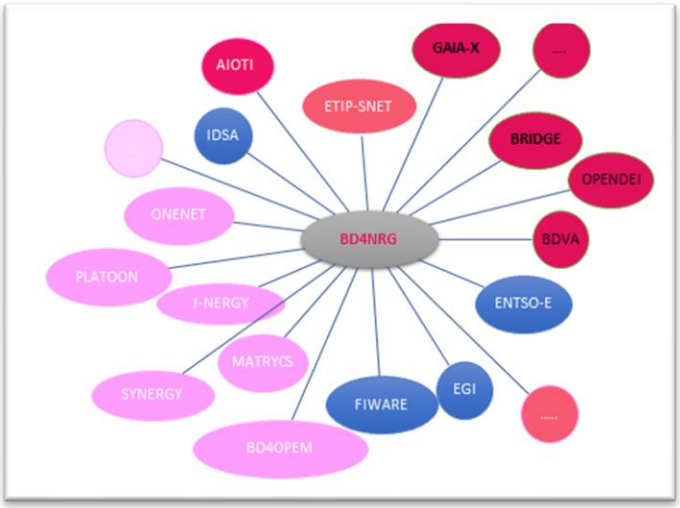

Figure 11: BD4NRG Ecosystem overview

Table 4 below lists the expected impact on general audience, industry, businesses, initiatives and other EU funded projects from M1-M18, the KPIs to be reached by the end of the project and the status so

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far.

Table 4: Monitoring and evaluation of Stakeholders and ecosystem building activities

Type	KPIs	Achieved by M18
Number of synergies with other related programmes and initiatives	15	20
Members of BD4NRG ecosystem	50	33

4.1 Stakeholder Engagement

The goal of the Stakeholder Engagement plan is to define an internal strategy on how to involve relevant target groups and create feedback loops, ensuring that partners have the necessary knowledge and tools to engage, inform and create synergies with key stakeholders. Bringing the external world on board and cooperating with it throughout the full duration of the project, as well as after its completion, will be an important factor for the success of BD4NRG, its tools, final results and scale up.

In the first half of the project a set of relevant for the project organisations have been listed as potential supporters, promoters and even advocates of the project based on Stakeholders mapping in *D10.1 Dissemination and Communication Strategy – Stakeholder Engagement Plan.* So far, 33 stakeholders have been identified with the majority coming from the energy sector and industry associations and technology clusters (Figure 12). More information can be found in Appendix II Ecosystem Building Tracker.

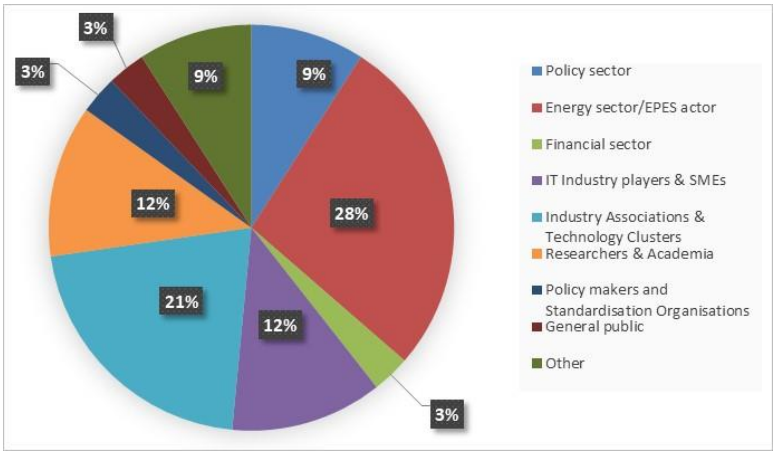

Figure 12: BD4NRG Stakeholders tracker highlights-1st half of the project

The BD4NRG consortium has been thoroughly consulted on who, why and how should be involved and reached out, analysing which relevant parties have or could have an interest in the project scope and objectives. For this purpose, a specific excel file has been defined and shared with partners for collecting the relevant information. Then the information has been elaborated in order to define how to engage them.

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The assessment is based on partners' individual assessment of their network and stakeholders' expertise, mandate and relevance to the project. The list of BD4NRG relevant stakeholder is a living document shared among the project consortium in project's Teams Repository, able to be periodically updated if new relevant stakeholders are identified.

The concrete contact details of the highlighted organisations are subject to GDPR rules and will remain visible only to the BD4NRG partners who have identified them. The detailed list can be found in the project's repository in Microsoft Teams and all BD4NRG partners have access. A list with all stakeholders identified so far including relevant information but no sensitive data can be found in Appendix II. It will be all partners' individual responsibility to use all tools at hand - social media, the project online materials, invitation to BD4NRG workshops and webinars, newsletters, external events, and one-to-one meetings – to engage the targeted stakeholders and disseminate outputs. The stakeholders list will used only for dissemination scope or any other activity under WP10 and passing always from partners who provide this information.

4.2 Community and Ecosystem Building

The BD4NRG consortium has a strong potentiality in terms of network creation starting from partners' network and commitments in EU or national initiatives relevant in the big data, data management, Interoperability, AI, IOT and Energy domains.

The BD4NRG consortium is represented from specific partners, for establishing a dialogue and continuous exchange, over the whole duration of the project, in order to avoid duplication of work and exploit synergies. To this end, the BD4NRG consortium is participating, providing its contributions to open discussion to relevant initiatives and projects like: OPEN-DEI, Big data value association (BDVA/DAIRO), BRIDGE EU initiatives ect. The consortium has also established relationships with the sister projects: PLATOON, BD4OPEM, I-NERGY, MATRYCS, and SYNERGY.

Table 5 below provides a list of the initiatives where the BD4NRG partners are able to cooperate and is already providing feedback on the basis of the project results, exchanging experiences and acquired knowledge. The table below already provides some information for several initiatives on the topics or specific Working Groups or Task Forces (if existing) where already the BD4NRG partner is participating and on which topic he is going to contribute or is already contributing.

Table 5: BD4NRG list of initiatives

	Partner	Reference person within BD4NRG	Working Group or Task Force	BD4NRG link, in terms of : Topic, WP, other
OPENDEI	ENG	Massimo Bertoncini	WG2-Data reference framework	WP2 Reference architecture
	ATOS	Javier Valiño, Arturo Medela		
	ED	Nikos Bilidis	WG2-Data reference framework	

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	Partner	Reference person within BD4NRG	Working Group or Task Force	BD4NRG link, in terms of : Topic, WP, other
	TNO	Harrie Bastiaanssen		
	FIWARE	Juanjo Hierro		
	ENTSO	Lorant Dekany	WG3 - Linking Ecosystems	
	CINT	Maria Papadimitriou	WG3 - Linking Ecosystems	
GAIA X	ENG	Massimo Bertoncini		WP2, reference architecture
	ATOS	TBD		
	ENERC	Natalie Samovich Through AIOTI, SB		Link to WP2 - System Requirements and Specifications, namely T2.6 - Big Data, AI and IoT Reference Architecture and alignment with Extended COSMAG and GAIA-X Data Space Architectures
	FIWARE	Juanjo Hierro (founder member)		
	TNO	TBD		
	EGI Foundation	Mark Dietrich	Involvement in Gaia-X WGs	Link to some of the BD4NRG WP3 tasks
ETIP-SNET	ENG	Massimo Bertoncini	WG4 Digitisation of the electricity system and Customer participation	-
	ENELX	TBD		
	ENERC	Natalie Samovich	WG1	Link to WP2 - System Requirements and Specifications, namely T2.6 - Big Data, AI and IoT Reference Architecture and alignment with Extended COSMAG and GAIA-X Data Space Architectures

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	Partner	Reference person within BD4NRG	Working Group or Task Force	BD4NRG link, in terms of : Topic, WP, other
BRIDGE	ENG	Massimo Bertoncini	WG Data Management and WG business Model	Data management (WP2, WP3), Business modelling (WP10, and pilot assesments)
	ED	Nikos Bilidis	WG Data Management	ED is leading the Workflow on EU Data Reference Architecture
	ATOS	TBD		
	UNILJ	Andrej Gubina, Tomi Medved		
	ENERC	Natalie Samovich, João Campos	WG Business Models and WG Data Management	Link to WP10 on Dissemination, exploitation and standardisation
EDSO	RWTH	Antonello Monti		
	ENELX	TBD		
EURELECTRIC	ENELX	TBD		
	BORZEN	Borut Rajer, Andraž Kordeš		
	RWTH	Antonello Monti		
EUTC	RWTH	Antonello Monti		
LFE	RWTH	Antonello Monti		
EUROPEX	RWTH	Antonello Monti		
	BORZEN	Borut Rajer, Andraž Kordeš	WGPM, Balancing TF	
EOSC	EGI Foundation	Andrea Manzi, Smitesh Jain	EGI-ACE project, EOSC Future project, EOSC Association Task forces	EGI Foundation is the coordinator of the EGI-ACE project, the EOSC Computing platform, and leading some WPs in the EOSC Future project. Some of the EGI Foundation members are going to be part of the EOSC Association task forces, (https://www.eosc.eu/task-force-faq), the one on Semantic Interoperability could be relevant for BD4NRG

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	Partner	Reference person within BD4NRG	Working Group or Task Force	BD4NRG link, in terms of : Topic, WP, other
Copernicus (ecosystem)	EGI Foundation	Diego Scardaci		
AIOTI	ENERC	Natalie Samovich, João Campos	SB, WG Chair Energy, WG Standardization, Taskforce IoT for Green	Link to WP2 - System Requirements and Specifications, namely T2.6 - Big Data, AI and IoT Reference Architecture and alignment with Extended COSMAG and GAIA-X Data Space Architectures
SMARTEN	ENERC	Teresa Bertrand	Policy	Link to WP10 on Dissemination, exploitation and standardisation
CIGRE	UNILJ	Andrej Gubina		
	ENELX			
	ENERC	Natalie Samovich		Link to Task 8.6. LSP 10 "Collaborative Aggregated Energy Generation Prediction"
	ELES	TBD		
EUHubs4Data, EOSC-DIH	EGI Foundation	Andrea Manzi	EUHubs4Data WP5 leader (Federated data catalogue)	Activity on Data Soverignity with the deployment of IDSA connectors for Data Exchange, could be relevant to BD4NRG
IEEE European Public Policy Committee	UNILJ	Andrej Gubina		
	ENERC	Natalie Samovich; João Campos; Teresa Bertrand		Link to WP2, Task 2.5. Security, Privacy, Standards and Regulatory Compliance Specifications
SmartBuilt4EU	CAR	Sofía Mulero	TF2-Interoperability	
IEA EBC - Annex 81 - Data Driven Smart Buildings	CAR	Flávia de Andrade Pereira	Subtask C: Applications and Services | C.3 Building to Grid Applications B2G show-case.	
Smart Data Models	FIWARE Foundation	Alberto Abella; Juanjo Hierro		Energy and other connected subjects Data models

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	Partner	Reference person within BD4NRG	Working Group or Task Force	BD4NRG link, in terms of : Topic, WP, other
ASHRAE BACnet Committee - Semantic Interoperability Working Group	CAR	Flávia de Andrade Pereira	ASHRAE standard 223P Semantic Data Model for Analytics and Automation Applications in Buildings. Standardise semantic metadata concepts, and the digital data exchange of information between machines.	

4.3 Activities plan for Period II

During the second period of the project, BD4NRG partners will continue identifying, managing and enriching relationships with relevant projects and initiatives for BD4NRG.

The mapping between EU Initiatives and BD4NRG will be constantly updated not only to reach the respective KPI (Table 4) but to enlarge the ecosystem and built communication channels with targeted stakeholders. The list of BD4NRG relevant stakeholders as living shared document will be periodically updated if new relevant stakeholders are identified and used for promoting project results and open call. Moreover, in the second period, the main focus will be to strengthen relations and contributions towards already identified initiatives leveraging on the specific identified project partners.

The synergies with other projects will be constantly managed and updated although the targeted number has already been reached while active engagement in common events, co-organisation of dedicated sessions etc. will be identified.

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5 Standardisation and Clustering Activities

The standardisation and clustering activities under *Task 10.2 Standardisation and Clustering activities* is following an approach consisting of these four major tasks:

- **Identify** relevant committees and working groups (WGs) for the project along with continuous monitoring of interesting standardization initiatives for the project development.
- **Define** an action plan together with a complete schedule for the standardization activities specifying where to invest our time and energy.
- **Report** in the two iterations of the deliverable "BD4NRG Dissemination, Communication, Stakeholder Engagement, Standardization and Data Management Handling Report" about the progress of our activities (D10.4 and D10.8).
- **Update** the action plan based on the project progress along the project lifespan.

5.1 Standardisation activities

The present chapter is the first report on the standardisation activities of the project. It contains a list of the standards that have been identified by the consortium as relevant for BD4NRG and their respective standardisation committees and working groups.

During the first months of the project, all partners were asked to contribute to the standardisation and clustering activities by identifying standards in the different fields that could be related to BD4NRG, describing the standards, assessing the impact on specific project tasks, and providing links and contact persons of the different standardisation bodies or working groups.

So far, the project partners have identified a list of 42 standards in total. The main areas which these identified standards cover are:

- IoT, device integration (13 standards)
- Cloud computing (5 standards)
- Message exchange (3 standards)
- Information security (3 standards)

The remaining standards refer to data interoperability, APIs, data integration and modeling, real time communication etc.

Table 6: Standardisation activities monitoring

Type	KPIs and Monitoring Indicators	Achieved by M18
Number of standards in which BD4NRG consortium provides contribution	>10	42 standards identified (contribution not provided yet

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The table below shows the identified standards for which the impact for BD4NRG has been evaluated. During the coming months, the potential impact for the remaining standards will be assessed.

Table 7: BD4NRG identified standards

Area	Committee	Reference standards, protocols, systems	Description	Impact on BD4NRG The impact on BD4NRG evaluation is a continuous process
Message Exchange	ISO/IEC JTC 1	ISO/IEC 21778:2017	Information technology – The JSON data interchange syntax	Digital twin, application run-time, inter-platform interoperability, data acquisition, services and message bus, ai-analytics designer, ai-analytics runtime, marketplace, storage, human collaboration
Message Exchange	ISO/IEC JTC 1	ISO/IEC 20922:2016	Information technology – Message Queuing Telemetry Transport (MQTT)	Application run-time, inter-platform interoperability, data acquisition, services, and message bus
Data Inter-operability	IEC/TC 65/SC 65E	IEC 62541 series [Under development]	OPC unified architecture – All Parts	Data acquisition*, portal*, services and message bus
IoT, Device Integration	ISO/IEC JTC 1/ SC 41	ISO/IEC NP TR 30164	Verlassen	Distributed computing
IoT, Device Integration	ISO/IEC JTC 1/ SC 41	ISO/IEC 21823-1:2019	Internet of things (IoT) – Interoperability for internet of things – Part 1: Framework	Data acquisition*
IoT, Device Integration	ISO/IEC JTC 1/ SC 41	ISO/IEC NP 30165 [Under development]	Internet of Things (IoT) – Real-time IoT framework	Process optimization run-time, process assurance run-time
Message Exchange	ISO/IEC JTC 1	ISO/IEC 19464:2014	Information technology – Advanced Message Queuing Protocol (AMQP)	Process optimization run-time, application run-time, inter-platform interoperability
IoT, Device Integration	ISO/IEC JTC 1/ SC 41	ISO/IEC NP 30161 [Under development	Internet of Things (IoT) – Requirements of IoT data exchange platform for various IoT services	Application runtime*

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Area	Committee	Reference standards, protocols, systems	Description	Impact on BD4NRG The impact on BD4NRG evaluation is a continuous process
IoT, Device Integration	ISO/IEC JTC 1/ SC 41	ISO/IEC NP 30162 [Under development]	Internet of Things (IoT) – Compatibility requirements and model for devices within industrial IoT systems	Applications builder*
IoT, Device Integration	ISO/IEC JTC 1/ SC 41	ISO/IEC NP 30149 [Under development]	Internet of things (IoT) – Trustworthiness framework	Secure communication, secure authentication/ authorisation, security designer*
IoT, Device Integration	ISO/IEC JTC 1/ SC 41	ISO/IEC NP TR 30164 [Under development]	Internet of things (IoT) – Edge Computing	Distributed computing
Information Security	DIN	DIN SPEC 27070	Requirements and reference architecture of a security gateway for the exchange of industry data and services	Secure data sharing
Cloud Computing	ISO/IEC JTC 1/ SC 38	ISO/IEC 17788:2014	Information technology – Cloud computing – Overview and vocabulary	Autonomous computing, distributed computing, storage
Information Security	IEC/TC 65	IEC 62443 series	Security for industrial automation and control systems	Secure installation, secure communication, secure authentication/authorisation
API	ETSI CIM	NGSI - LD	Description of open specification and generic API for implementing data sharing. Review of existing implementations of the API.	Potential extensive use
Data Modelling	Agile standardizatio n body	Smart Data models (for energy and other sectors, weather, environment, green energy, OPC UA, IoT sensoring, etc)	Description of smart data models for energy (and for other sectors). Mapping of Common information model to open licensed data models. GreenEnergy subject. Weather data models, Earth Observation.	Potential extensive use
IoT, device Integration		Modbus TCP, Modbus RTU	Communication protocol used to collect data from local devices	Data acquisition

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Area	Committee	Reference standards, protocols, systems	Description	Impact on BD4NRG The impact on BD4NRG evaluation is a continuous process
Real time communication		MQTT protocol used with JSON, CSV	Communication protocol used to transfer real-time data from integrated devices to Data Acquisition System	Data acquisition
Data exchange, Interoperability, data modeling, standartisation.	IEC/TC 57	IEC 61970 series, IEC 61970-600 series, HTML, XML, RDFS.	Transfering power network in common information model (CIM/CGMES) format, Extending CIM/CGMES to meet European requirements, Description of conformity assessment process for CGMES related standards, Standartisation of modeling guidelines and interoperability of modeling tools.	Data exchange, Interoperability, Standartization, Extending CIM/CGMES.
Policy	IEEE WG on Energy for the European Public Policy Committee		Through this Working Group, European IEEE members are able to participate in peer-selected volunteer groups that develop public policy position statements and may engage in or organize policy-related events.	Dissemination of results through public policy position statements
Data exchange, Interoperability, data modeling, standartisation.	BRIDGE Data Management WG		Communication Infrastructure, embracing the technical and non-technical aspects of the communication infrastructure needed to exchange data and the related requirements, including issues faced by TSO and DSO	Allows for overview (and reuse) of existing semantic data models, interoperability architectures

Alongside the mentioned standards, the project partners have also identified the following relevant initiatives and committees:

- ↗ OPEN DEI
- Data Spaces Task Force – IDSA is member. Paper published.
- Standardisation activities lead by Fiware.
- WG Energy
  - ↗ FIWARE

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- IEEE P3800 Data Trading System (FIWARE + IDSA): The purpose of the standard is to "provide the foundation for a data-trading system that allows multilateral exchanges of data".
- ETSI CIM: Description of open specification and generic API for implementing data sharing. Review of existing implementations of the API (FIWARE)
- Open Smart Data Models – Description of smart data models for energy (and for other sectors). Mapping of Common information model to open licensed data models. GreenEnergy subject. Weather data models, Earth Observation. (FIWARE)
    - BRIDGE
- Data Management WG – Data exchange, Interoperability, data modelling, standardization.
    - ISO Data Spaces Committee
- Definition of RA for Data Spaces
    - IEEE WG P2004, WG Energy
- Develop technical policy statements and other documents
    - GAIA-X
- Energy Data space group (domain group)
    - Data Space Standardisation plan (IDSA)
- ISO: The IDSA continue its work on bringing the DIN SPEC 27070 at ISO level
- BD4NRG could contribute to promote IDS connector as a Standard ISO.
- IEEE: The iEEE P3800 Data Trading System is a new workshop to create this standard based on IDS-RAM
- W3C: IDSA prepares the standardization of the IDS Information model under the umbrella of W3C

This has been the first iteration of the identification of relevant standards, committees, and initiatives. Project partners can continue contributing to the standards and their input will be used for the second iteration.

5.2 Clustering activities

Along with the standardisation activities, clustering activities are taken place. As such, the consortium was invited to participated in the "Data Spaces & Interoperability Workshop" organized by W3C and IDSA within the EU Project TRUSTS. The one-day workshop focused on the requirements, standards, certification, tools, licenses and in Data Spaces & Semantic Interoperability. BD4NRG partners had the chance to participate in a call for papers. TNO participated with the paper "The Vocabulary Hub to configure data space connectors". The paper was selected and presented at the Workshop in Vienna on June 3rd.

5.3 Activities plan for Period II

During the second half period of the project, the identification of relevant standards, committees, and initiatives for BD4NRG will continue along with their prioritisation.

Another key activity will be to establish communication channels with standardisation committees and

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collaborate with the energy working groups of initiatives like Open DEI and Gaia-X.

After identifying and prioritising standards and establishing communication channels with standardisation committees, BD4NRG aims to contribute to (at least) ten existing standards (Table 6).

For every standardisation committee identified during the workshop, a responsible person within BD4NRG will be assigned. The main duty of this person will be to gather improvement ideas for a specific standard from the rest of the partners, fill in the recommendation template and bring it to the standardisation committee.

As part of the International Data Spaces (IDS) Standardisation roadmap, IDS will invite the BD4NRG consortium to a workshop that will cover topics as:

- Presentation of the standardisation targets for BD4NRG
- Finalize the BD4NRG standards landscape.
- Identify requirements and needs in the project, which can be transferred to standardisation committees.
- Prioritise identified standards.
- Select at least ten (10), for which the project can provide contribution.
- Discuss engagement possibilities with their respective standardisation committees
- Present a template for recommendations for future standards.
- Define who will be in charge of gathering the improvement ideas for the specific standards and presenting them to the standardisation committees.

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6 Data Management Handling

BD4NRG partners are following a series of activities to publish project outcomes and mainly in open access to communicate and increase impact to the targeted stakeholders. This action is increasing the interest and strengthen the exploitation potential of the project outcomes.

Such information includes scientific publications, open-source code, open datasets, stakeholders identification and feedback, informational material etc. WP10 is following the D1.2 Data Management Plan for the handling of all relevant data, and the consequent publication, storage, processing and management for dissemination and communication activities.

6.1 Data archiving and publishing

BD4NRG uses since the first months of the project several platforms to publish results. There are:

- BD4NRG website, the main source of information for BD4NRG and its dissemination activities. Dedicated tabs exist for accessing resources (publications, media, dissemination material) and BD4NRG relevant content.
- A Zenodo online repository for research publications helping researchers to share their results in a wide variety of formats for all fields of science.
- Microsoft Teams BD4NRG repository, in which all the internal consortium activities are taking place. In the repository, members of the consortium have access to all related material (pending their approval from the project coordinator, ENG) for the communication and dissemination activities.

6.2 Data Handling

- Scientific Publications

BD4NRG dissemination activities are based on scientific publications for project results. The Data Management Plan which is in alignment with EC guidelines indicate open access to scientific publications, hence this is what the project follows. All publications referring to BD4NRG does and will clearly state acknowledgement to the project and the funding tender. Scientific publications also comply with the FAIR data principles when possible, as stated in the Data Management Plan.

- Deliverables

All public deliverables will be published in the BD4NRG website so as to ensure free access to anyone without any restriction. Deliverables will also be uploaded to the abovementioned list of platforms, where applicable. However, sensitive information regarding developments and results of BD4NRG that are under IPR policies may be not available. Prior to the publication of the deliverables, the process of identification type of information to be excluded will take place. As for now, all public deliverables for the first half of the project will be uploaded in the website after the project review process in September 2022.

- Data

Data related to the communication activities, are processed as described in D1.2 Data Management Plan. As WP10 engages with external stakeholders for communication and dissemination activities, relevant data privacy and security measures are enacted to ensure data privacy and compliance to

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GDPR legislation. As of now, BD4NRG gathers data of users through its website, managed by HOLISTIC. The privacy and cookies policies describing how data are processed and secured can be found in this link available in BD4NRG website. BD4NRG may collect information such as contact info in order to disseminate to external audience its activities (i.e., Newsletters).

BD4NRG will coordinate an Open Call, in which organisations may partake and compete for funding of third-party applications (under task T10.5). This process will generate personal data (submissions, communications with applicants) that will be handled according to the Data Management Plan. In the under-development Applicants Guide, a section including the Legal Framework, Privacy and Ethical Issues would be available and presenting relevant information regarding the data management handling between BD4NRG and the Open Call applicants. The Applicants Guide will be available in the dedicated Open Call portal (created by CINTECH), once it is open for submissions.

6.3 Activities plan for Period II

The next steps for the Data Management Handling activities are apart from ensuring alignment with D1.2 Data Management Plan for the handling of all relevant data, and the consequent publication, storage, processing and management for dissemination and communication activities, are to publish the project's deliverables into its website (after review process), create further repositories so as to ensure as higher impact as possible via open access platforms (e.g., Research Gate, GitHub) and coordinate required actions for Open Call activities, as data exchange with third parties is expected to be held.

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7 Conclusions and Next Steps

This document presents the overview of the dissemination, communication, stakeholders' engagement, standardisation and data management handling activities and approached for the first half of the project (M1-M18). This assessment was under *Phase I: Raise Awareness* and the half part of *Phase II: Diffuse Knowledge* where apart from defining the status and analysis of activities, allows the adjusting and define new targets and take corrective actions to achieve the already KPIs and increase as much as possible the project impact during the second half of the project. It should be noted that all activities have several targets already achieved, while other must be improved and expected to be improved since the most technical outcomes are expected during the second half of the project.

Concerning Dissemination activities deviations from KPIs have been identified and special focus will be given during the next months to ensure targets achievement. For example, publications, workshops, events etc. are expected to be accomplished during the second reporting period as results start to be consolidated. The first period dissemination activities focused more on raising awareness. Other future steps include participation in events, conferences, hackathons, standardisation meetings, organising sessions (jointly maybe with other projects and initiatives), participation in exhibition stands (which has been eliminated due to covid-19 pandemic restrictions).

Communication activities during the first half of the project tried to be a dynamic way of raising awareness by introducing BD4NRG in a wider audience. A timely presence in social media, website and blog was and continues as the ultimate goal ensuring the flow of information, outcomes etc. A remarkable strong e-pressence via projects social media accounts and website has been achieved and partners will work so as to increase this presence. A set of introductory communication materials in different forms (poster, brochure, banner, institutional presentation, infographics, video, GIFs) have been prepared and expected to be updated upon BD4NRG results consolidation.

As far as Stakeholder Engagement plan is concerned the focus lies on the creation of relationships and synergies with relevant stakeholders, projects and EU initiatives. The project partners leveraging on their network have been able to reach more than 15 EU initiatives and more than 33 stakeholders as project supporter and in the second period of the project the expectation is that the consortium will consolidate and enrich those relationships and synergies to their full potential.

Regarding the standardisation and clustering activities, during the second half of the project, the identification of standards, committees and initiatives will be continued, although a significant number (42) has been already identified. However enhanced effort will be given to establish strong communication with the identified committees and collaborate towards the contribution to at least 10 existing standards with improvement ideas arose via BD4NRG activities.

Finally, concerning Data Management Handling, BD4NRG follows D1.2 Data Management Plan guidelines for dissemination and communication activities. Results and outcomes are made publicly available whenever possible, through BD4NRG's established channels (e.g., social media, BD4NRG website). Regarding research results and outcomes open data and FAIR principles are followed, with the results being published to BD4NRG's Zenodo repository. Finally, GDPR regulations is constantly followed when BD4NRG processes personal data to reach its audience (i.e., newsletters activity). The next steps for the Data Management Handling activities, are to publish the project's deliverables into its website, create further repositories (e.g., Research Gate, GitHub) and the Open Call activities, as

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data exchange with third parties is expected to be held.

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Appendix I Dissemination Tracker

BD4NRG Events

Date	Responsible partner	Type of BD4NRG events (select from drop-down list)	Title of event	Country / Medium	Type of dissemination activities	N° of ppl reached	Scientific community	Industry	Civil society	General public	Policy makers	Investors	Other (who)	Dissemination level (local, regional, national, European…)	Link(s) to evidence	Comments
16/02/2021	HOLISTIC	Presentation of BD4NRG	Digital Transformation in the Energy Sector	online	Social Media	75	25	10	15	10	10		5	Worlwide	https://www.eugcc-cleanergy.net/	The event was co-organised with EUGCC Clean Energy Network
12-14/07/2021	NTUA	Organisation of a Workshop	Big Data Analytics in the Energy Sector	online	Website	15	8				2		5	Worldwide	Microsoft Word - IISA_2021_Handbook_final (easyconferences.eu)	This session was co-organised with MATRYCS project as a special session with the IISA 2021 conference

Other events

Date	Responsible partner	Type of other events (select from drop-down list)	Title of event	Country / Medium	Type of dissemination activities	N° of ppl reached	Scientific community	Industry	Civil society	General public	Policy makers	Investors	Other (who)	Dissemination level (local, regional, national, European…)	Link(s) to evidence	Comments
25/02/2021	LEIF	Participation in an Event other than a Conference or a Workshop	Webinar "Maintenance of a public building after renovation"	Online	Press release	300								European	https://bit.ly/3OvvHxW	
2-4/03/2021	ENG	Participation in activities organised jointly with other H2020 projects	BRIDGE General Assembly	online	Presentation	115	x	x			x			European	https://bit.ly/3xAqmOM	
26/03/2021	ENG	Other	"Reference architecture for cross-border and cross-sector energy data exchange" Webinar in the framework of the EU Industry Days, BRIDGE	Online	Presentation		x	x			x			European	https://bit.ly/3bf4Ck6	
31/3/2021	NTUA	Participation in a Training	Training Seminars 'Renewable Energy & Energy Efficiency as key drivers for Energy Transitions' - Part II - Day 2: Smart Technologies and Digitalization | EU-GCC Clean Energy Technology Network	Online	Presentation	200	x	x			x	x		Worldwide	https://www.eugcc-cleanergy.net/energy-efficiency-31-03-2021	
2-4/03/2021	ENERC	Participation in activities organised jointly with other H2020 projects	BRIDGE General Assembly	Online			x	x			x			European	https://bit.ly/3xK9x4f	Attending the WG4 - Business models session
27/5/2021	ENERC	Other	Data Week 2021- European Big Data and Data Driven AI research and innovation communies -Data4 Energy: Big data fueled energy transition	Online	Presentation		x	x			x			European	https://www.big-data-value.eu/dw21-agenda/	
22-23/06/2021	ENG	Participation at a Conference	IDSA Summit	Online	Presentation		x	x			x			Worldwide	https://internationaldataspaces.org/events/idsa-summit-2021/	
12/7/2021	NTUA	Participation at a Conference	The Twelfth International Confernce on Information, Intelligence, Systems and Applications (IISA 2021), 12-14 July 2021	Online	Presentation		x	x			x			Worldwide	https://easyconferences.eu/iisa2021/se	https://easyconferences.eu/iisa2021/wp-content/uploads/2021/07/IISA_2021_Handbook_final-12_July-1.pdf
14/7/2021	CARTIF	Participation at a Conference	EURO2021 Athens - 31st European Conference on Operational Research 11-14 July 2021	Online	Presentation		x	x						Worldwide	https://www.euro-online.org/conf/euro31/program	Stream OR for intelligent energy services. WB-50: Decision Support for Intelligent Energy Management [Wednesday 14th 10:30-12:00]
14/7/2021	NTUA	Participation at a Conference	EURO2021 Athens - 31st European Conference on Operational Res	Online	Presentation		x	x			x	x		Worldwide	https://www.euro-online.org/conf/euro31/program	Stream OR for intelligent energy services. WB-50: Decision Support for Intelligent Energy Management [Wednesday 14th 10:30-12:00]

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Date	Responsible partner	Type of other events (select from drop-down list)	Title of event	Country / Medium	Type of dissemination activities	N° of ppl reached	Scientific community	Industry	Civil society	General public	Policy makers	Investors	Other (who)	Dissemination level (local, regional, national, European...)	Link(s) to evidence	Comments
12/9/2021	TS	Other	Presentation of the BD4NRG project to the ANRE (Romanian Energy Regulatory Authority)	Bucharest, Romania	Presentation						x			Local		
13-14/09/2021	ENERC	Participation at a Workshop	Next Generation IOT - Workshop on IoT and Edge Computing Research and Standardisation Convergence	Online	Presentation		x	x						Worldwide	https://bit.ly/3bjCQmJ	
27/10/2021	NTUA	Participation at a Workshop	IEEE SmartGridComm 2021 Workshop "Artificial and Human Intelligence for Community-empowered Sustainable Energy Systems"	Online	Presentation		x	x			x			European	https://bit.ly/3NafRaW	
27/10/2021	ENG	Participation at a Workshop	IEEE SmartGridComm 2021 Workshop "Artificial and Human Intelligence for Community-empowered Sustainable Energy Systems"	Online	Presentation		x	x			x			European	https://bit.ly/3bjCcWl	
15/11/2021	EMOT	Participation at a Conference	International Webinar on Smart Grid and Green Energy Systems	Online	Presentation		x	x						Worldwide	https://crgconferences.com/greenenergy/2021/	https://www.youtube.com/watch?v=0Ut33vYgYmc
3/3/2022	ATOS	Participation at a Workshop	OPEN DEI - CEF Operational Digital Platforms for Energy and Mobility Sectors: Operational Digital Platforms to Booster the Digitalization of European Networks	Online	Presentation		x	x						European	https://www.opendei.eu/event/cef-operational-digital-platforms-for-energy-and-mobility-sectors/	
6/3/2022	TNO	Participation at a Workshop	Workshop: Data Spaces & Semantic Interoperability - TRUSTS (trusts-data.eu)	Vienna, AT	Presentation									European		Position paper; see also Publications tab
17/3/2022	CN	Participation in activities organised jointly with other H2020 projects	Open DEI - WG3 -Open Call Joint Dissemination Event	Online	Presentation					x				Worldwide	https://www.opendei.eu/event/open-dei-open-calls-dissemination-event/	
22-24/03/2022	ENERC	Participation in an Event other than a Conference or a Workshop	BRIDGE General Assembly	Online	Presentation		x	x						European	https://bit.ly/3HD9hZg	Attending the WG4 - Business models session
29/4/2022	NTUA	Other	Latvian ministries meeting and presentation of LEIF pilot vision	Online	Presentation		x	x			x	x		Regional	https://bit.ly/3zSqEDq	
29/4/2022	LEIF	Other	Latvian ministries meeting and presentation of LEIF pilot vision	Online	Presentation		x	x			x	x		Regional	https://bit.ly/39NaLUa	
19/5/2022	ENERC	Participation in an Event other than a Conference or a Workshop	AIOTI Working Group of Energy monthly meeting	Online	Presentation	10	x	x						European		
1/6/2022	ENG	Other	Data Week 2022-Data Week-European Big Data and Data Driven AI research and innovation communities	Online	Presentation		x	x			x			European	https://www.bd4nrg.eu/news-events/events/dataweek-join-learn-share-19-may-9-june-2022	
1/6/2022	NTUA	Other	Data Week 2022-Data Week-European Big Data and Data Driven AI research and innovation communities	Online	Presentation		x	x			x			European	https://www.bd4nrg.eu/news-events/events/dataweek-join-learn-share-19-may-9-june-2022	

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Media activity (Articles, PR, social media)

Date	Responsible partner	Type of media activity (select from drop-down list)	Title media activity / Description	N° of ppl reached	Scientific community	Industry	Civil society	General public	Policy makers	Investors	Other (who)	Link(s) to evidence	Comments
1/2/2021	LEIF	LEIF home page	Information about the 1st project brochure					x				http://lvif.gov.lv/?object_id=33761	
1/2/2021	IDSA	Linkedin	Presentation of the project on LinkedIn					x				https://www.linkedin.com/posts/international-data-spaces-association_the-rising-decentralization-of-the-energy-activity-6793182948741935104-IJg5	
12/3/2021	UBIMET	Website	presentation of project on company website					x				https://www.ubimet.com/en/technology/meteorological-research-development/bd4nrg/	
28/04/2021	IDSA	IDSA home page	News article presenting project					x				New Research Project: Big Data for Next Generation Energy - International Data Spaces	
25/05/2021	EMOT	Website	Presentation of the project on company website					x				https://emotion-team.com/ricerca-e-sviluppo/bd4nrg-2/	
2/8/2021	VEOLIA	Social Media	Presentation of the project on LinkedIn					x				https://www.linkedin.com/feed/update/urn:li:activity:6827880395351052288/	
4/10/2021	ATOS	Social Media	Promotion of BD4NRG's 1st Newsletter		x	x	x	x	x	x		https://twitter.com/AriMarcomm/status/1444984953440280578?s=20	
26/10/2021	ATOS	Website	Presentation of BD4NRG in ATOS Research & Innovation website, along with link to project's official web page.		x	x	x	x	x	x		https://booklet.atosresearch.eu/project/bd4nrg	
30/11/2021 - 02/12/2021	ENG	Virtual Exhibition	BD4NRG included in the EU Projects at Enlit Europe / https://www.enlit-europe.com/eu-projects-365		x	x	x	x	x	x		https://www.enlit-europe.com/	Brief presentation of the project ,including references and contact (Enlit will be hold from 30 November to 2 Dic. 2021. It will be a hybrid event - https://www.enlit-europe.com/)
7/12/2021	LEIF	LEIF home page	Presentation of the project					x				http://lvif.gov.lv/?object_id=33796	
01/02/2021.	LEIF	LEIF home page	Information about the 1st project brochure					x				http://lvif.gov.lv/?object_id=33761	
25/05/2022-01/06/2022	ATOS	Social Media	Promotion of BD4NRG's GA		x	x	x	x	x	x		https://twitter.com/Bd4Nrg/status/1529443890285133824?s=20&t=cW_ArMmqPNmoHPaYI7o9HQ https://twitter.com/AriMarcomm/status/1531910671914311680?s=20&t=cW_ArMmqPNmoHPaYI7o9HQ	
22/3/2022	IDSA	Newsletter	Presentation of the project in our newsletter					x				Magazines - International Data Spaces	
5/4/2022	EGI	Website	Project video showcased in a news on the website		x							https://www.egi.eu/article/bd4nrg-project-in-a-nutshell/	
31/03/2022	EGI	Website	Project presence on the website									https://www.egi.eu/project/bd4nrg/	
ongoing	IDSA	IDSA home page	BD4NRG included in projects page					x				Projects - International Data Spaces	

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Scientific publications

Title of the scientific publication	Type of publication	Repository link: link to a copy of the published version or the author's accepted manuscript that has been deposited in a repository for scientific publications, or to a page within that repository providing access to the deposited version (possibly after the end of an embargo period, where applicable). This is NOT a link to the publication on the journal / publisher website, and it is NOT a link to a personal or institutional homepage where the publication may have been posted.	Link to the publication: If the publication doesn't have a DOI, please enter a link to the publication on the journal/publisher website.	DOI	ISBN	Authors:Name(s) comma-separated	Title of the Journal / Proceedings / Books series / Book (for book chapters)	Number, date or frequency of the Journal / Proceedings / Book	Publisher	Place of publication	Year of publication	Relevant pages	Is this publication available in Open-Access, or will it be made available?	Is this a peer-reviewed publication?	Is this a joint public/private publication? Both the joint publications coming from public and private project participants as well as from private/public project participants with public/private organisations outside the consortium (as long as they are related to the funded project) should be reported
Data analytics for Improving the Financeability of Energy Efficiency Investments	Conference	https://euro2021athens.com/ (To be updated)				Marinakis V., Koutsellis T., Dimitropoulos N., Zucika A., Doukas H.	31st European Conference on Operational Research, in session Energy Services in Buildings and Communities			Athens, Greece	11-14 July 2021				
AI models, Visual Analytics and Querying for Big Data in the Energy Sector	Conference	https://euro2021athens.com/ (To be updated)				Anastasatos G., Karakolis V., Marinakis V., Doukas H.	31st European Conference on Operational Research, in session Decision Support for Intelligent Energy Management			Athens, Greece	11-14 July 2021				
Data-driven applications to identify sustainable investment pathways in energy management and efficiency	Conference	https://easyconferences.eu/iisa2021/ (To be updated)				Koutsellis T., Marinakis V., Mylona Z., Zučika A., Doukas H.	IEEE 12th International Conference on Information, Intelligence, Systems and Applications (IISA 2021)			Online	12-14 July 2021				
Position paper: The Vocabulary Hub to configure data space connectors	Workshop	Workshop: Data Spaces & Semantic Interoperability - TRUSTS (trusts-data.eu)				Wouter van den Berg, Michiel Stonerbrink, Arjan Stoter, Jan Pieter Wijbenga				Vienna, AT	3 June 2022				

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Appendix II Ecosystem Building Tracker

Full name of organisation	Website	Position/specific office or group to be involved from the listed organisation (if any)	Type of stakeholder	Describe briefly the stakeholder	How can this actor benefit from BD4NRG?	What role can this actor play in BD4NRG? *(Development, Implementation, Replication, Dissemination, Other*	Need of involvement *(Low - 0 ; High - 5)*	Influence *(Low - 0 ; High - 5)*	Choose how aware/supportive the stakeholder is when it comes to the project
Borzen, d.o.o.	www.borzen.si/en		Energy sector/EPES actor	Slovenian electricity market operator (delegated operator), responsible for organising the Slovenian electricity market (incl. setting market rules) and various other functions, relating to renewables (FIT support system, GO Registry ...) and other fields (e.g. REMIT RRM reporting service).	Upcoming business models on the electricity market will be both data-driven and demanding regarding data (flows, analysis); we need to study pilot effects in order to successfully enable these models on the market	All of the above relating primarily to LSP6	3	2	Active in the project
AREAL - Regional energy agency of the Algarve	https://www.areal-energia.pt/		Energy sector/EPES actor	AREAL assists and advises the Algarve and the regional public authorities in their sustainable energy strategies, such as energy efficiency, energy management systems and renewable energy sources planning	Acquiring knowledge on the project and participating in the stakeholder engagement and dissemination efforts	Dissemination	3	2	Not aware of BD4NRG
UALG - University of Algarve (School of Engineering)	https://ise.ualg.pt/en		Researcher/Academia	The University of Algarve is the academic partner that develops state-of-the-art research in areas related to energy sustainability and ICT, namely in the planning of energy communities	Potentially building on the project's results and involvement in dissemination activities	Development, Dissemination,	3	3	Not aware of BD4NRG
CCDR-Algarve	https://www.ccdr-alg.pt/site/		Policy sector	The Commission is responsible for defining the regional development priorities and allocating public funds to the development of projects in line with such priorities	CCDR-Algarve will be made aware of the project being developed with the active participation of the regional agents; potential for replication will be explored	Dissemination, replication	3	4	Supportive

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Full name of organisation	Website	Position/specific office or group to be involved from the listed organisation (if any)	Type of stakeholder	Describe briefly the stakeholder	How can this actor benefit from BD4NRG?	What role can this actor play in BD4NRG? *(Development, Implementation, Replication, Dissemination, Other*	Need of involvement *(Low - 0 ; High - 5)*	Influence *(Low - 0 ; High - 5)*	Choose how aware/supportive the stakeholder is when it comes to the project
EU-GCC Clean Energy Technology Network	https://www.eugcc-cleanergy.net/		Other	EU-GCC Clean Energy Technology Network provides a wide variety of services and offering to its Members. Networking and fostering of partnership between EU and GCC institutions are the key services that are provided.	Networking and Partnership development, with a wide range of stakeholders in the energy sector	Dissemination	4	4	Supportive
CITY NETWORK FOR SUSTAINABLE DEVELOPMENT AND CYCLICAL ECONOMY (SUSTAINABLE CITY)	https://www.sustainable-city.gr/index.html#	General Manager	General public	Sustainable City provides substantial technical assistance in the fields of informing, networking, and management to the participating Municipalities to the network, so that they can submit and implement proposals to European Programmes and exploit the additional available funding provided.	They could enhance their know-how on the energy management practices for better implementation of actions plans provided to their network.	Replication, Dissemination	3	3	Supportive
University of Pireaus (UNIPI)	https://teeslab.unipi.gr/team/alexandros-flamos/	Associate Professor	Researcher/Academia	It focuses on the techno-economic analysis of energy systems, and the support of effective energy and climate policy design.	Theiy are interested on new ways to integrate energy systems analysis and management methods	Development, Dissemination	3	3	Supportive
Institute for European Energy and Climate Policy (IEECP)	http://www.ieecp.org/	Managing Director	Policy maker/Standardisation organisation	EECP provides solutions, networking platforms and knowledge to ensure authorities about tools/practices to deliver EU Green Deal and Paris Agreement obligations, enable know-how exhange on energy efficiency policy deisng as well as implementation and evaluation of impacts and to promote new business and financial models for energy efficiency	Theiy are interested on new ways to integrate energy systems analysis and management methods	Dissemination	3	3	Supportive
SECI srl	www.secienergia.it	Chairman of the board	IT industry	consulting firm for innovative services	Inspiration for new ideas	Replication	1	1	Not aware of BD4NRG

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Full name of organisation	Website	Position/specific office or group to be involved from the listed organisation (if any)	Type of stakeholder	Describe briefly the stakeholder	How can this actor benefit from BD4NRG?	What role can this actor play in BD4NRG? *(Development, Implementation, Replication, Dissemination, Other*	Need of involvement *(Low - 0 ; High - 5)*	Influence *(Low - 0 ; High - 5)*	Choose how aware/supportive the stakeholder is when it comes to the project
			player/SME						
Free Energia	www.freeenergia.it	Administrator	Energy sector	enrgy retailer; aggregator	end user	Replication	1	1	Not aware of BD4NRG
teamware	www.teamware.it	managing partner	IT industry player/SME	measurement devices developper for Smart grids	Inspiration for new ideas	Replication	2	2	Not aware of BD4NRG
Umbria Energy	www.umbriaenergy.it	CEO	Energy sector	retailer	end user	Replication	2	2	Not aware of BD4NRG
ASSEM S.p.A.	www.assemspa.it	Technician	Energy sector	DSO	end user	Replication	3	3	Not aware of BD4NRG
Comune di Terni (Terni city Council)	www.comune.terni.it	Energy manager	Energy sector	Terni city Council - public works unit	end user	Replication	3	3	Not aware of BD4NRG
Sistemi Integrati Srl	www.sistemiintegratisrl.it	System integrator	IT industry player/SME	building energy management system developper	end user	Replication	2	2	Not aware of BD4NRG
SCS srl	www.comsec-suite.com	Consultant	IT industry player/SME	security consultant service	end user	Replication	2	2	Not aware of BD4NRG
Ministry of Economics	https://www.em.gov.lv/lv	Sustainable Energy Policy Department	Policy sector	The Ministry of Economics develop, organise and coordinate external economic, construction, energy, internal market, innovation development, commercial development, competitiveness development, housing, consumer protection, privatisation, industrial, standardisation and tourism policies, as well as structural economic policies.	Use the tool in the daily operations	Development/ Implementation	4	5	Supportive

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Full name of organisation	Website	Position/specific office or group to be involved from the listed organisation (if any)	Type of stakeholder	Describe briefly the stakeholder	How can this actor benefit from BD4NRG?	What role can this actor play in BD4NRG? *(Development, Implementation, Replication, Dissemination, Other*	Need of involvement *(Low - 0 ; High - 5)*	Influence *(Low - 0 ; High - 5)*	Choose how aware/supportive the stakeholder is when it comes to the project
Ministry of Environmental Protection and Regional Development	https://www.varam.gov.lv/lv	Investment Policy Department	Policy sector	Ministry of Environmental Protection and Regional Development of the Republic of Latvia is responsible for implementing policy in three areas - environment protection, regional development as well as information and communication technologies.	Use the tool in the daily operations	Development/ Implementation	4	5	Supportive
State-owned development finance institution ALTUM	https://www.altum.lv/lv	Energy Efficiency Programs Department	Financial sector	ALTUM is a state-owned development finance institution, which offers state aid for various target groups with the help of financial tools (such as loans, credit guarantees, investing in venture capital funds, etc.). ALTUM develops and implements state aid programmes to compensate for the market's shortcomings that can't be solved by private financial institutions.	Use the tool in the daily operations	Development/ Implementation	4	5	Supportive
Riga energy agency	http://www.rea.riga.lv/	Not relavant	Energy sector/EPES actor	The Agency has the following functions: 1. To elaborate and update the Development Concept of Riga District Heating System; 2. To elaborate the Program for Increase of Energy Efficiency; to organize implementation of Program and related projects; 3. To prepare an annual report on the current situation and the progress made in area of energy efficiency in Riga city;	Use the tool in the daily operations	Development/Replication/Dissemination	3	3	Supportive
Zemgale energy agency	https://www.zrea.lv/ne	Not relavant	Energy sector/EPES actor	Objective of the company is to promote energy efficiency and use of renewable energy resources in public and private sectors as well as to ensure general availability of information on these issues.	Use the tool in the daily operations	Development/Replication/Dissemination	3	3	Supportive

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Full name of organisation	Website	Position/specific office or group to be involved from the listed organisation (if any)	Type of stakeholder	Describe briefly the stakeholder	How can this actor benefit from BD4NRG?	What role can this actor play in BD4NRG? *(Development, Implementation, Replication, Dissemination, Other*	Need of involvement *(Low - 0 ; High - 5)*	Influence *(Low - 0 ; High - 5)*	Choose how aware/supportive the stakeholder is when it comes to the project
Riga Tehnical University	www.itl.rtu.lv/mik/?id=34	Not relavant	Researcher/Academia	Main activities are in the field of discrete-event simulation; at the same time, there are interests and experiences in simulation of continuous systems as well. Simulation projects are performed mainly on the basis of IBM-compatible personal computers. Both general (e.g., C++, Pascal, Visual Basic) and simulation (e.g., SIMAN/ARENA, Witness, Promodel, MATLAB, STELLA) languages and systems are used.	Use the tool in the daily operations	Development/Replication/Dissemination	2	2	Supportive
Fortum	https://www.fortum.lv/	Not relavant	Energy sector/EPES actor	Fortum is a European energy company operating in more than 40 countries. They offer our customers electricity, gas, heating and cooling services, and smart solutions for resource efficiency.	Use the tool in the daily operations	Development/Implementation	2	2	Supportive
EKODOMA	http://www.ekodoma.lv/ne	Not relavant	Other	EKODOMA Ltd. is an engineering consulting company, whose main activities are related to energy-efficient solutions and sustainable energy sources. Our aim is to achieve economic growth without causing harm to the environment. This can be achieved in every phase of project planning, taking into account both sustainable climate and energy planning concepts as well as providing our advice on the most appropriate technical solutions.	Use the tool in the daily operations	Development/Replication/Dissemination	4	4	Supportive
EDSO	https://www.edsoforsmartgrids.eu	N/A	Industry association/Technology cluster	Association of the major DSO in Europe	DSO are key in the future concerning data management	Dissemination	3	4	Not sure

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EURELECTRIC	https://www.eurelectric.org	N/A	Industry association/Technology cluster	It links 3500 companies in the energy sector	It is the largest association in the energy sector in europe	Dissemination	2	4	Not sure
EUTC	https://eutc.org	N/A	Industry association/Technology cluster	It is the techbnical association of the utility. It plays a key role in defining key technologies	There is a lot to be done in data management and they would be interested in our solutions	Dissemination	3	5	Not sure
LFE	https://www.lfenergy.org	N/A	Other	They are a world wide initiative for open source in energy	They are working on architecture and data solutions right now. They could use our input	Replication	3	3	Supportive
BDVA/DAIRO	https://www.bdva.eu/	TF7 Application/ SG12 Energy	Industry association/Technology cluster	It is an industry-driven international not–for-profit organisation with more than 200 members all over Europe, committed in the the domains of: AI, BD and roboticts	Sharing knowlegde and results in terms of BD management and AI developments, Reference Architectures in the field of energy	Dissemination	4	5	Supportive
OPENDEI	https://www.opendei.eu/	WG2-Data reference framework	Researcher/Academia	the OPEN DEI project focuses on “Platforms and Pilots” to support the implementation of next generation digital platforms in four basic industrial domains: Manufacturing, Agriculture, Energy and Healthcare	Sharing knowlegde and results in terms of BD management and AI developments, Reference Architectures in the field of energy	Dissemination	4	4	Supportive
GAIA X	https://www.data-infrastructure.eu/GAIAX/Navigation/EN/Home/home.html		Industry association/Technology cluster	GAIA-X is a project initiated by Europe for Europe. Its aim is to develop common requirements for a European data infrastructure.	Sharing knowlegde and results in terms of BD management and AI developments, Reference Architectures in the field of energy	Dissemination	5	5	Supportive

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ETIP-SNET	https://www.etip-snet.eu/	WG4 Digitisation of the electricity system and Customer participation	Industry association/Technology cluster	ETIP Smart Networks for Energy Transition (SNET) aims to guide Research, Development & Innovation (RD&I) to support Europe's energy transition	Sharing knowlegde and results in terms of BD management and AI developments, Reference Architectures in the field of energy	Dissemination	4	4	Supportive
BRIDGE		WG Data Management and WG business Model	Industry association/Technology cluster		Sharing knowlegde and results in terms of BD management and AI developments, Reference Architectures, bussiness models in the field of energy	Dissemination	5	5	Supportive

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