ENERGY SHIELD

Integrated Cybersecurity Solution for the Vulnerability Assessment, Monitoring and Protection of Critical Energy Infrastructures

INNOVATION ACTION

H2020 Grant Agreement Number: 832907

W7 COMMUNICATION, DISSEMINATION& ECOSYSTEM DEVELOPMENT

D7.5 – DELIVERABLE – DISSEMINATION REPORT V1

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Abstract:	This task plans and implements dissemination activities such as posters, publications, keynote speeches, event participation, digital resources, educational resources, as well as the development of a project video. At the beginning of this task, the project consortium will specify the project's dissemination strategy and a time-plan, which will be re-assessed and refined periodically. The efforts will start at project kick-off with mentions on the partner website and social media activities. The partners will publish the public deliverables from the project, together with relevant technology and industry related news, on the project website. In addition, the partners will publish articles or white papers and make presentations at industry conferences, etc. Peer reviewed articles will be deposited within six months of their publication in open access databases such as OpenAire and ResearchGate. EU restraint and classified information will not be handled via the regular project infrastructure, but via specific (secure) communication channels established by the coordinator based on the Project Security Board recommendations and EU regulations.
Keywords	Dissemination Plan, strategy, branding, dissemination tools, data privacy, project website, dissemination opportunities, activities and monitoring, project video, publications, open access.

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0.1	04/05/2020	Initial Creation
0.2	29/05/2020	Review version
0.3	09/06/2020	QA version
0.4	29/06/2020	Final update of KPIs
1.0	05/07/2020	Final version, released to the EC

EXECUTIVE SUMARY

This report provides a quantitative analysis of the impact of the communication and dissemination activities performed by EnergyShield consortium members. It illustrates the outcomes of dissemination plan and execution of both internal and external communication of the project results through a variety of channels.

The dissemination process itself is closely monitored within the EnergyShield project by means of surveys defined via ECAS (European Citizen Action Service) tool.

Overall, the strategy proposed has been proven efficient, the progress of the assumed KPIs being in line with the set targets.

The selected channels of dissemination are relevant for the project as for most KPIs the progress is close to the targets set. To improve the performance and the impact improvement measures have been draft for all the channels of distributions. As Twitter has proven an important vector of dissemination, specific tools have been used to boost account visibility. A solid social media channel of dissemination and communication would also support the traditional channels in their endeavour to gain visibility.

COVID-19 pandemic has forced switching to an exclusive online presence and sharing all related materials via online tools/].

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ACRONYMS

ACRONYM	DESCRIPTION
CEZ	CEZ Distribution Bulgaria
CITY	City University London
CoTTP	Cogen Zagore Ltd
D	Deliverable
DIL	D I L DIEL Ltd aka Goldline
DSO	Distribution System Operator
EPES	Electrical Power & Energy Systems
ESO	Bulgarian Electricity System Operator EAD
FOR	foreseeti AB
IREN	IREN S.p.A.
KPI	Key Performance Indicator
KT	Konnekt-able Technologies
KTH	KTH Royal Institute of Technology
L7D	L7Defense
M	Month
MIG	MIG 23 Ltd
NTUA	National Technical University of Athens
PSI	PSI Software AG
R&D	Research and Development
SC	Software Company Limited
SIGA	Si-Ga Data Security Ltd
SIV	Software Imagination & Vision Romania
T	Task
TEC	Tech Inspire Limited
TSO	Transmission System Operator
VETS	VETS Lenishta OOD
WP	Work package

1. INTRODUCTION

1.1. SCOPE AND OBJECTIVES

The objective of this deliverable is to illustrate the outcomes of dissemination plan and execution of both internal and external communication of the project results through a variety of channels. Thus, this report covers the conducted efforts of the consortium members during the first twelve months of the project.

1.2. STRUCTURE OF THE REPORT

This report is structured in two main parts.

In the first part the strategy proposed in D7.4 [ESH19] is revisited and updated in the context of COVID-19 pandemic, while in the second part a quantitative analysis of the activates performed is provided. Starting from the assumed KPIs the performance of every dissemination channel is detailed alongside with consortium partner's individual contributions.

1.3. TASK DEPENDENCIES

WP7 Communication, Dissemination & Ecosystem Development focuses on the dissemination of project results and the development of an ecosystem of partners along the value chain and includes reports referring to both strategy and progress per communication, dissemination and collaboration activities.

D7.5 takes over and updated the dissemination strategy proposed in D7.4 [ESH19] and provides an analysis of the EnergyShield KPIs at the end of the 1st year of implementation.

WP8 Exploitation & Scale Up builds upon both the dissemination and communication activities and aims at scaling them up beyond the project horizon.

2. DISSEMINATION STRATEGY

This section covers the summarised dissemination plan outlined for the EnergyShield project [ESH19] and introduces new approaches to improve the coverage of dissemination activities.

2.1. APPROACH TO ENERGYSHIELD DISSEMINATION

A coordinated dissemination approach is important to ensure a far-reaching impact of the EnergyShield project. To disseminate in an effective and efficient manner a couple of things were considered early in project lifecycle:

- Assessment of change readiness
- Engagement throughout the project
- Enabling transfer of project outcome

The dissemination process itself is closely monitored within the EnergyShield project by means of surveys defined via ECAS (European Citizen Action Service) tool. A four-step dissemination process flow is proposed and presented in Figure 1, below.

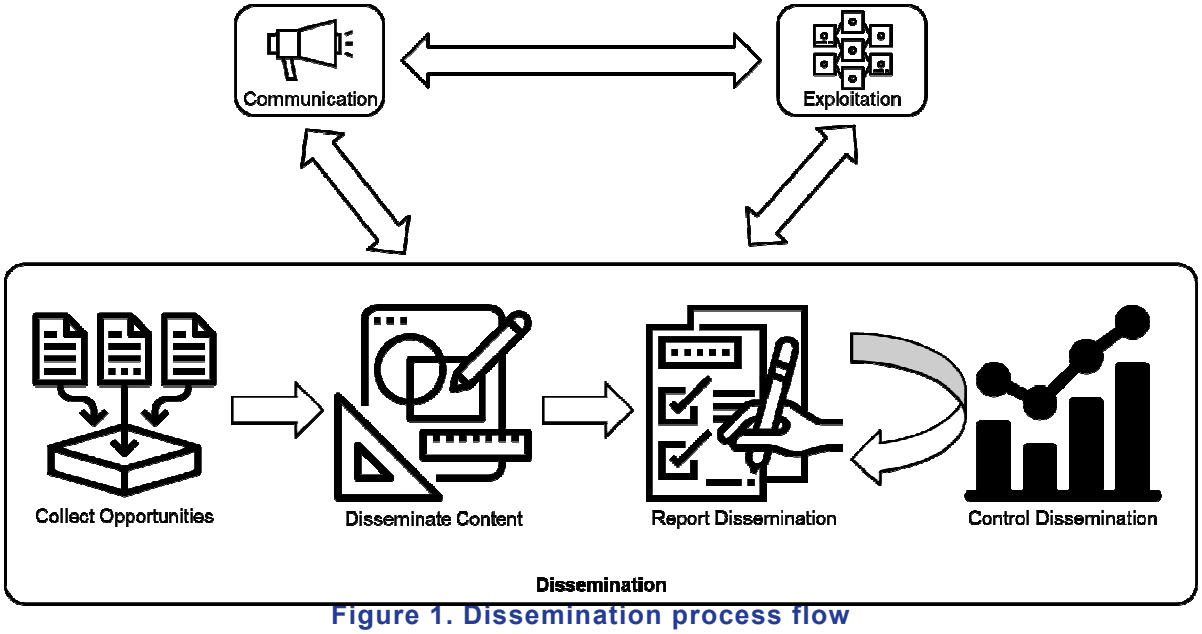

Figure 1. Dissemination process flow

Basically, the process follows the idea to first collect the dissemination opportunities from all partners and create a common knowledge base that can be shared with each other. Second, each partner is encouraged to disseminate created content of the project and if possible, to collaborate also with other partners in the project. Third, the partners report the conducted dissemination activities at a central place. This allows monitoring of the actual activities and identified opportunities for dissemination.

The **selected means of dissemination** are appropriate for EnergyShield project and continuous progress per KPIs was registered. The performance of KPIs is different considering the channels of distribution. The versatility of social media tools like Twitter has supported the efforts of Consortium partners, increasing the visibility of EnergyShield project and also fed the project with information about relevant online events. To the other end the number of users subscribing to our project newsletter remains low. To improve this consortium partners were invited to subscribe to share the subscription page with their contact to increase this number.

COVID-19 pandemic has forced adjustments in the dissemination strategy as the presence to large events became impossible. This means that printout materials are no longer relevant in EnergyShield dissemination plan. To continue ensuring dissemination of the project, the dissemination materials have been share via EnergyShield webpage and distributed via social media channels. Furthermore, Consortium partners are encouraged to attend and initiate digital events to share information about the project achievements. Workshops and webinars were planned for the next coming period to increase project visibility, to indentify collaboration opportunities with other projects and to extend the stakeholders network.

3. OVERALL QUANTITATIVE ANALYSIS

This section provides a quantitative analysis of the impact of the dissemination and communication activities performed during the first year of implementation The achievements on the proposed KPIs is detailed in the following subsections considering also the qualitative analysis performed in D7.2 Communication report [ESH20].

3.1. CONSIDERED KPIS

A summary of the assumed KPIs with targets set at the end of each year of implementation is presented in Table 1, below alongside with the progress registered at the end of M12.

Table 1. Communication and collaboration KPIs break down per years

Tool	Indicator(s)	M12 (PLAN)	M12 (Actual)	M24 (PLAN)	M36 (PLAN)
EnergyShield website	Number of unique visits	> 2,000	842	> 5,000	> 10,000
	Number of external references of the website	> 10	187	> 25	> 50
	Number of days that pass without an update	< 30 days	16.9	< 30 days	
EnergyShield brochure	Number of brochures created	500	50	21,000	2,000
	Request for additional project information generated by the brochure	> 40	0	> 100	> 200
Social Media Campaign	Views per promoted post	> 1,500	666	> 1,500	
	Number of followers	> 100	83	> 250	> 500
	Number of tweets	> 30	131	> 65	> 100
Newsletter	Number of newsletters created	> 3	2	> 7	> 10
	Number of readers who	> 200	35	> 500	> 1,000

Tool	Indicator(s)	M12 (PLAN)	M12 (Actual)	M24 (PLAN)	M36 (PLAN)
	received the newsletter through mail				
	Number of downloads of newsletter from web site	> 60	19	> 150	> 300
Articles	Number of generalist articles published	> 7	4	> 15	> 30
	# Published articles (Scientific)	>2	4	>5	>9
Press relations	Number of press releases issues	> 1	4	> 3	> 5
	Number of press clippings per press release	> 6	3.66	> 15	> 30
LinkedIn Groups	No of members	>20	38	>50	>100

The selected channels of dissemination are relevant for the project as for most KPIs the progress is close to the targets set. To improve the performance and the impact improvement measures have been draft for all the channels of distributions. As Twitter has proven an important vector of dissemination, specific tools have been used to boost account visibility. A solid social media channel of dissemination and communication would also support the traditional channels in their endeavour to gain visibility.

In the following section details about the opportunity of using the selected channels to disseminate project results together with the results achieved at the end of M12 are presented.

3.2. ENERGYSHIELD WEBSITE

3.2.1. UNIQUE VISITS

Figure 2. Progress of the number of unique visitors

The number of unique visitors accessing our website falls short of our expectations. Even though the number of users constantly increased since launching, the website needs a boost in the next period to achieve the targeted figures. We recognize an acceleration of visitors; however, this number does not increase as needed to achieve our goals.

To improve SEO of the website, a live twitter feed was added on homepage. (Figure 3). A SEO audit report done recently showed a need for improvement. The progressive increase of unique visitors instead of an exponential as targeted is closely linked to the content included on the project website. To increase the visibility and findability of www.energy-shield.eu the recommendations from the audit report will be considered in the next coming months while also closely monitoring the increase of numbers.

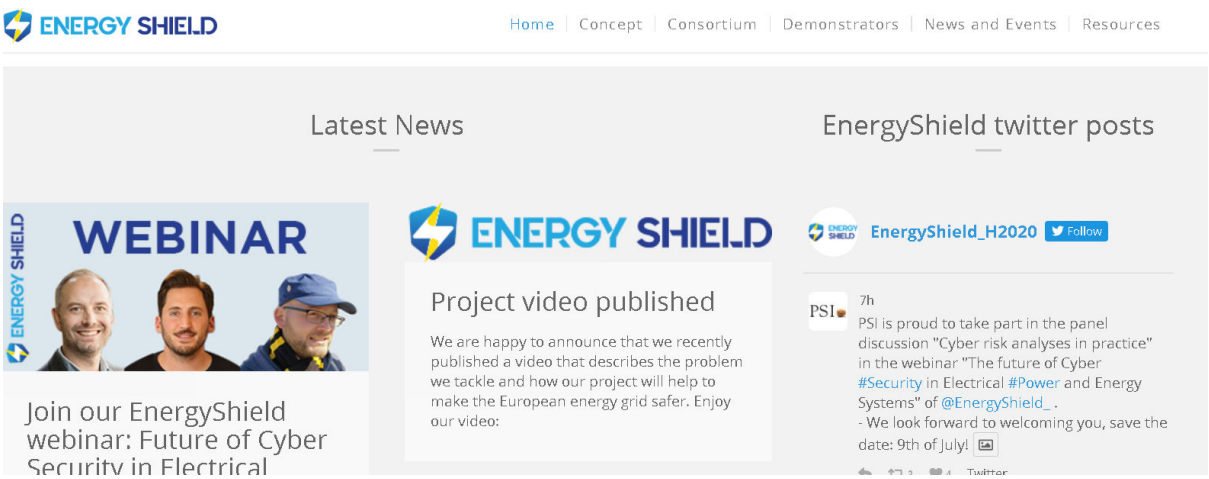

Figure 3. Screenshot of the news and twitter parts of the webpage

Furthermore, a video project summarizing the scope and the expected outcomes of EnergyShield project was created. It is posted on the front page and will be disseminated via social media channels.

Also, links to publications have been added on the website and promoted.

In the following months the number of articles published on the website will be increased and improved with whitepapers that describe the different tools and their interaction.

Expectations are that the interest in our website will increase significantly, when our project produces outcomes that are of direct interest for practitioners. Additionally, we expect a positive effect of communicating the outcomes of our first demonstrators (tools and toolkit).

External references

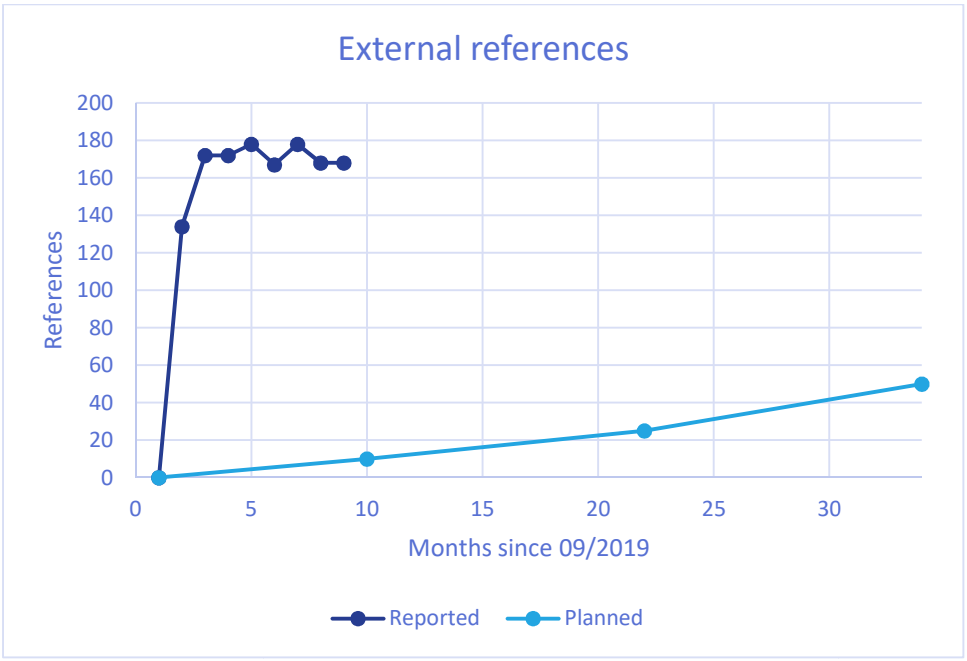

Figure 4. Progress of number of externals

The number of external references to our website outnumbers our expectations. Especially, we recognized a positive effect of our first press release. For the upcoming period, our focus will be on tracking that these number will stay on the same high level as it is at the moment.

3.2.2. UPDATE FREQUENCY

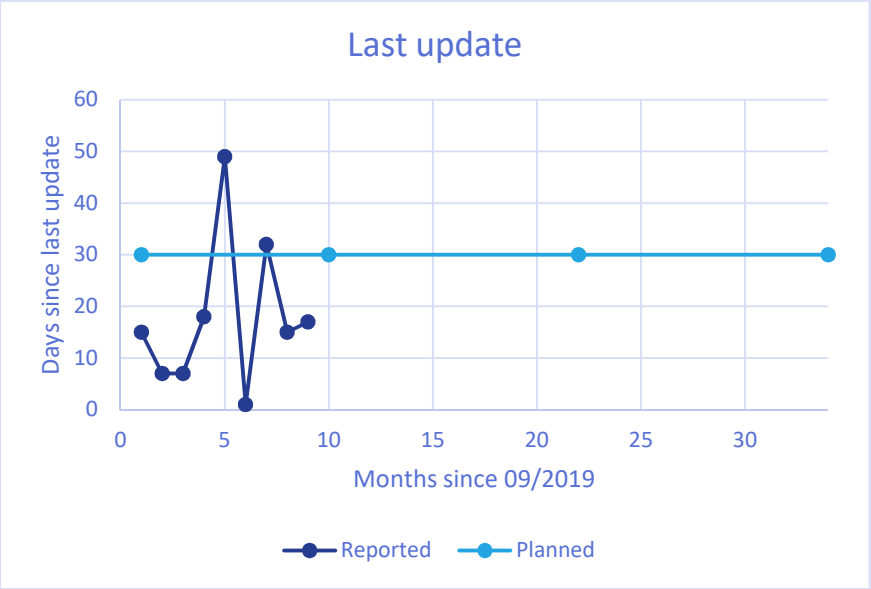

Figure 5. Progress of update frequency

The content on the website was updated at least once a month with an exception during winter holidays, but the medium update frequency is 16.9, better than planned. To attract visitor on our website via the published articles we will consider twitter campaigns and adding meaningful tags and metadata-descriptions. All major project related events have a dedicated article on the website and expectation are that the number of articles communicating results will increase as the demonstrators will be released.

3.2.3. CREATED BROCHURES

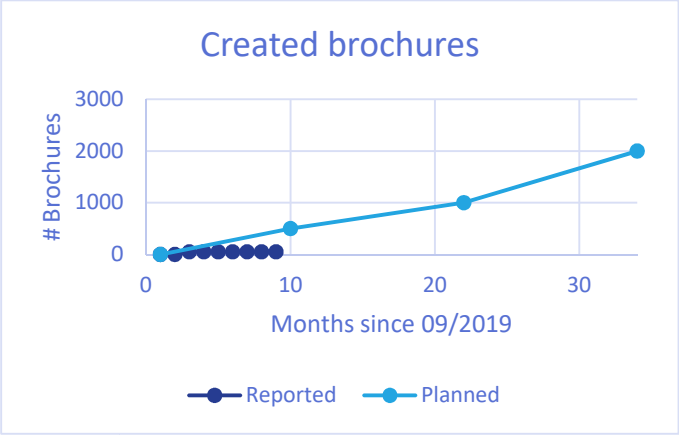

Figure 6. Progress of printouts

Creating and distributed printed brochures events with large participation was provisioned and considered an opportunity to disseminate information about the project. A number of 50 brochures were printed and distributed in events like European Utility Week.

As face to face events are not organized during this period print-outs cannot be distributed. As a back-up strategy for this means of dissemination the pdf version of the brochure is sent as follow-up of attending online events (workshop, webinars, conferences, etc), while also publishing it on the website and sharing it via social media channels.

3.2.4. REQUESTED ADDITIONAL INFORMATION

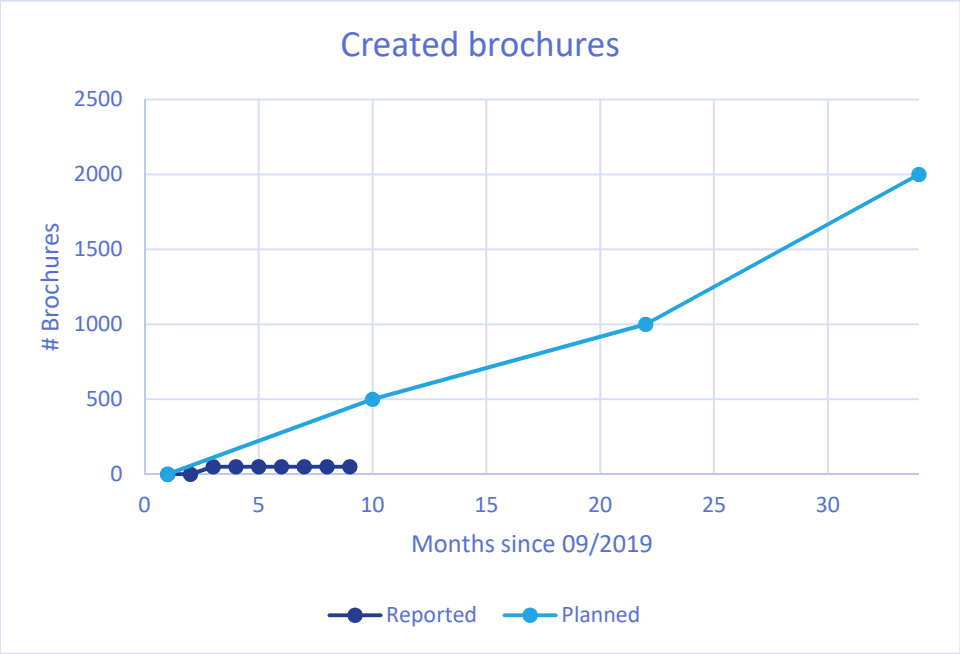

Figure 7. Progress of requested additional information

This KPI is difficult to track as we cannot determine if someone e.g. visited our website as a result of seeing our brochure or due to other reasons. We will keep this KPI on the list in case pandemic-limitations will come to a closure and large events with physical audience will be again possible.

3.3. SOCIAL MEDIA CAMPAIGN

3.3.1. VIEWS PER POST

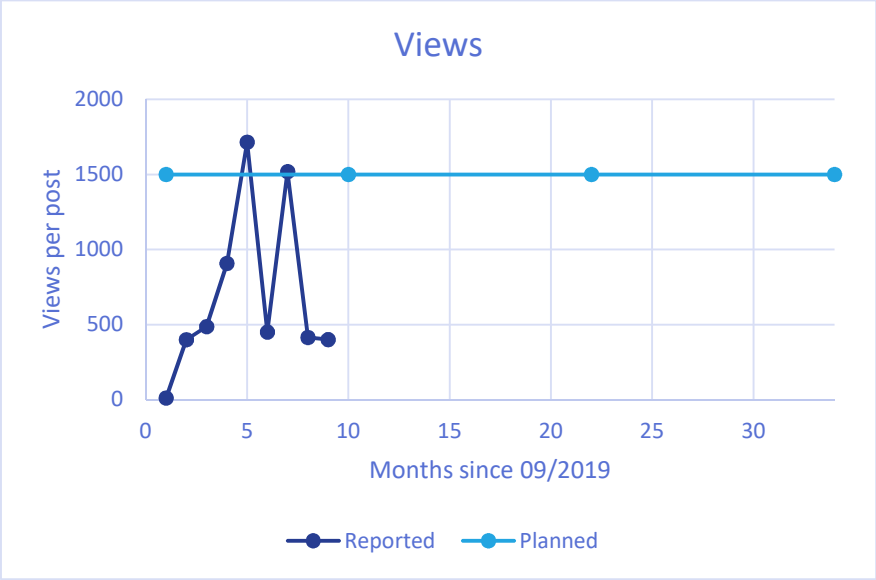

Figure 8. Progress of views per Tweet

Twitter is one of the dissemination channels that leaded EnergyShield to great achievements during the first reporting period.

To reach 1,500 views per Tweet is quite challenging, especially when you start with nearly no followers. However, we made it twice in the last period. As the number of followers is continuously increasing and we will produce interesting outcomes in the upcoming period, we are confident that we will cross the threshold of 1,500 views permanently.

3.3.2. FOLLOWERS

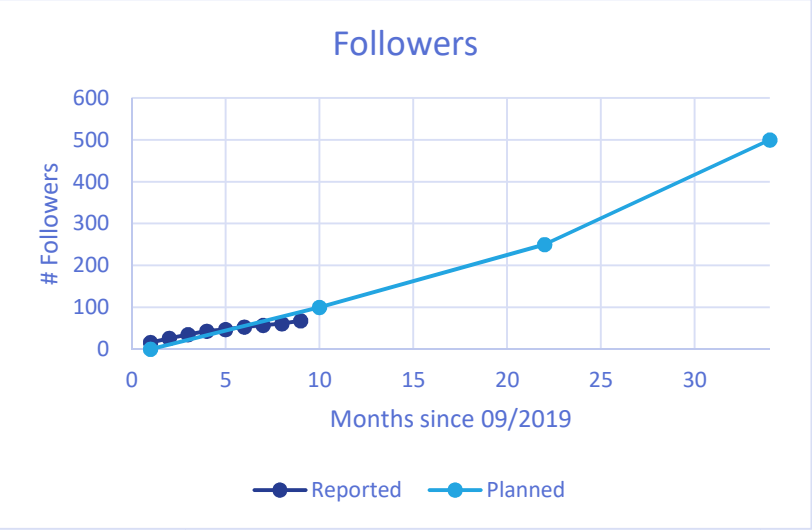

Figure 9. Progress of Twitter followers

Looking at the number of followers on twitter, the evolution follows closely the set target. As collaboration with similar projects is currently undergoing expectation are that project cross-fertilization will add followers to our list.

3.3.3. NUMBER OF MESSAGES

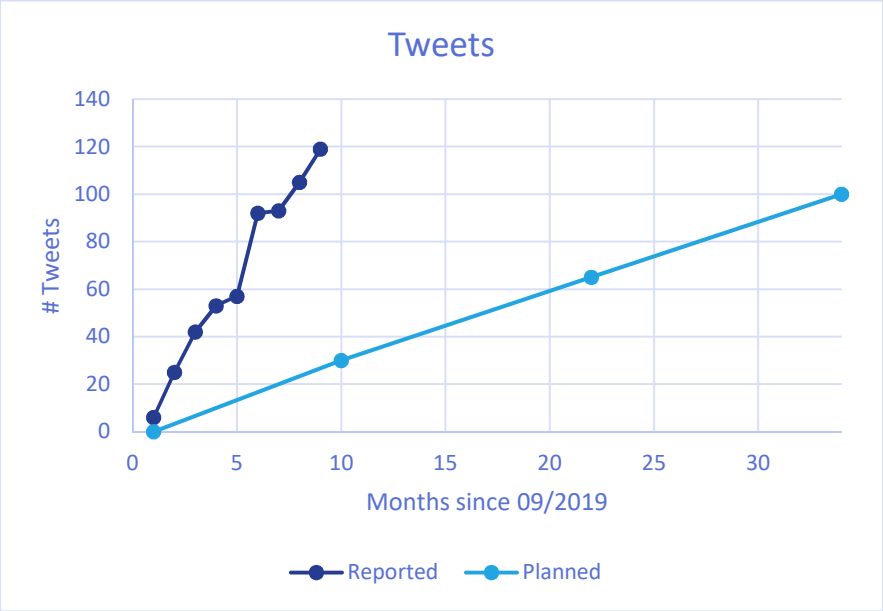

Figure 10. Progress of Tweets number

The number of tweets created is 3 times higher than the set targets and expectations are to soon exceed the targets set for the end of the project.

Disseminating via twitter will continue to be the first option when disseminating project results as our channel already has a significant number of readers and great list of projects and experts followed. Twitter is also great channel to get information about online events and get in touch with similar projects.

3.3.4. LINKEDIN MEMBERS

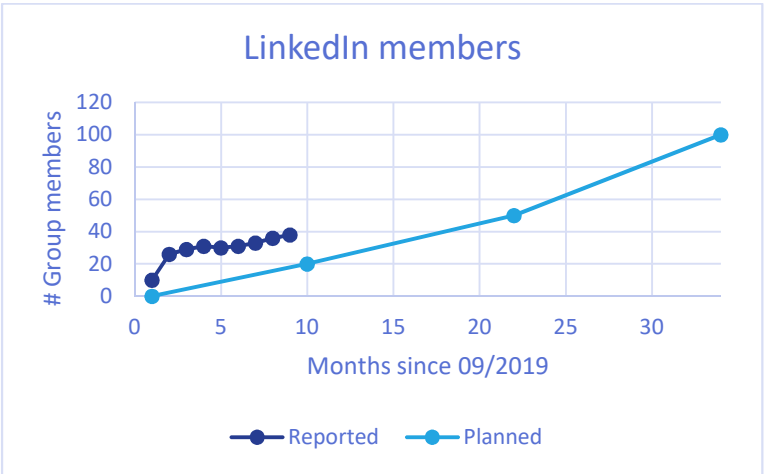

Figure 11. Progress of LinkedIn members

The number of members in our LinkedIn group is continuously growing and will hopefully increase fast simultaneously to the growing popularity of our project.

3.4. NEWSLETTER

3.4.1. CREATED NEWSLETTER

Figure 12. Number of created Newsletters

In the first year of project implementation 2 newsletters were issued. With a low number of subscribers the next newsletter is planned after SEO optimization.

3.4.2. READERS

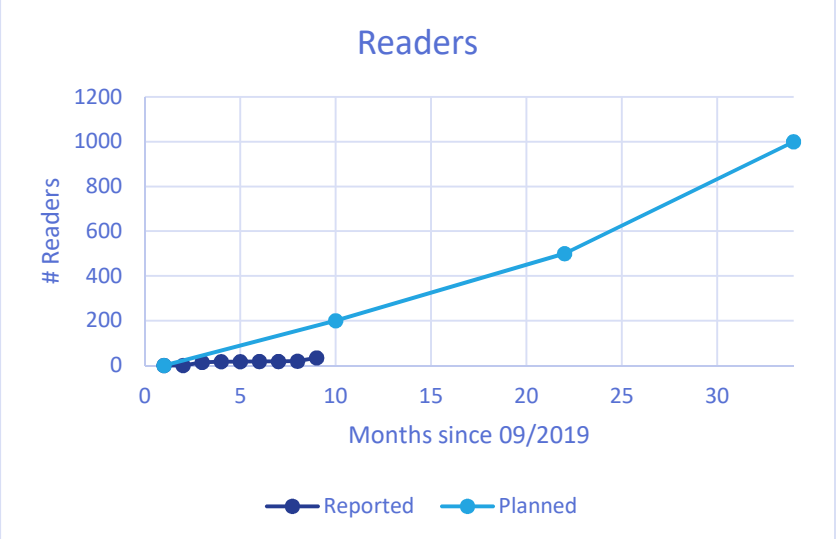

Figure 13. Number of newsletter readers

In the first reporting period EnergyShield issued 2 newsltters, mainly including content related to dissemination and collaboration activities. The SEO analysis has shown that improving the quality of the content on the website could increase the visibility and the numbers of visitors that might subscribe to the newsletter.

3.4.3. DOWNLOADS

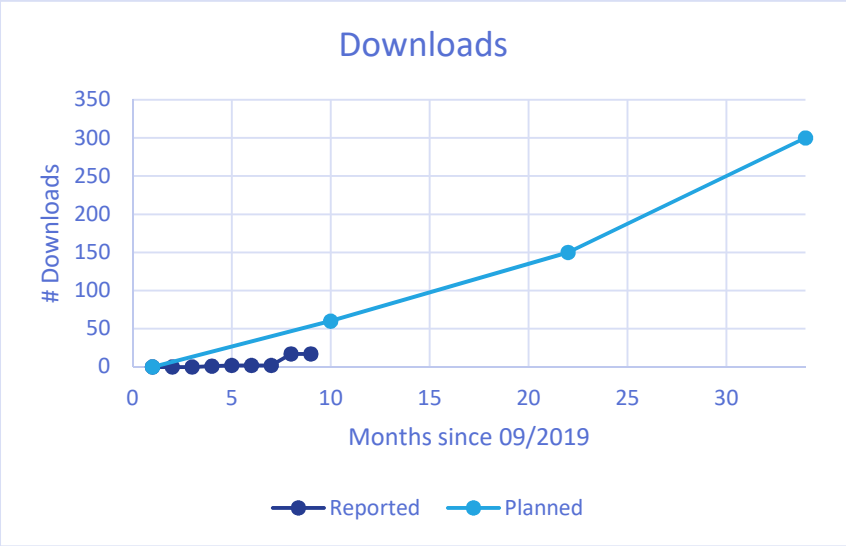

Figure 14. Number of newsletter downloads

The number of newsletter downloads is performing better that the number of readers. We recognized a significant growth of downloads after sending our second newsletter. As we expect an increase of newsletter readers, we expect for the same reasons increasing download numbers.

3.5. ARTICLES

3.5.1. SCIENTIFIC

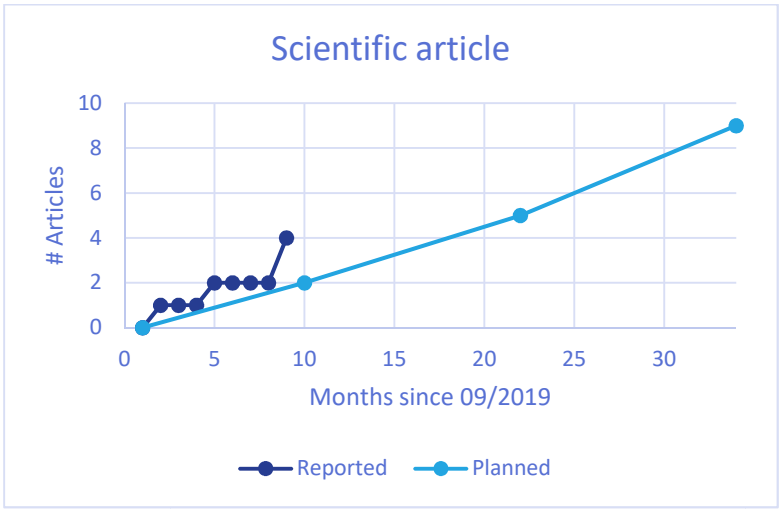

Figure 15. Number of scientific articles

In the first year of implementation two articles have been published and two have been accepted to conferences.

Table 2. EnergyShield publications

Year	Authors	Title	Venue	Status
2019	Hacks, Hacks, Katsikeas, Klaer, Lagerström	Creating MAL Instances Using ArchiMate on the Example of Attacks on Power Plants and Power Grids	2019 IEEE 23rd International Enterprise Distributed Object Computing Conference (EDOC)	Published
2020	Bounas, Georgiadou, Kontoulis, Mouzakitis, Askounis	Towards a cybersecurity culture tool through a holistic, multi-dimensional assessment framework	IADIS Information Systems Conference	Published
2020	Acarali, Rajarajan, Chema, Ginzburg	Modelling DoS Attacks & Interoperability in the Smart Grid	ICCCN 10th Internal Workshop on Security, Privacy, Trust, and Machine Learning for Internet of Things	Accepted
2020	Acarali, Rajarajan, Chema, Ginzburg	A Characterisation of Smart Grid DoS Attacks	EAI International Conference on Security and Privacy in New Computing Environments	Accepted

3.5.2. GENERAL

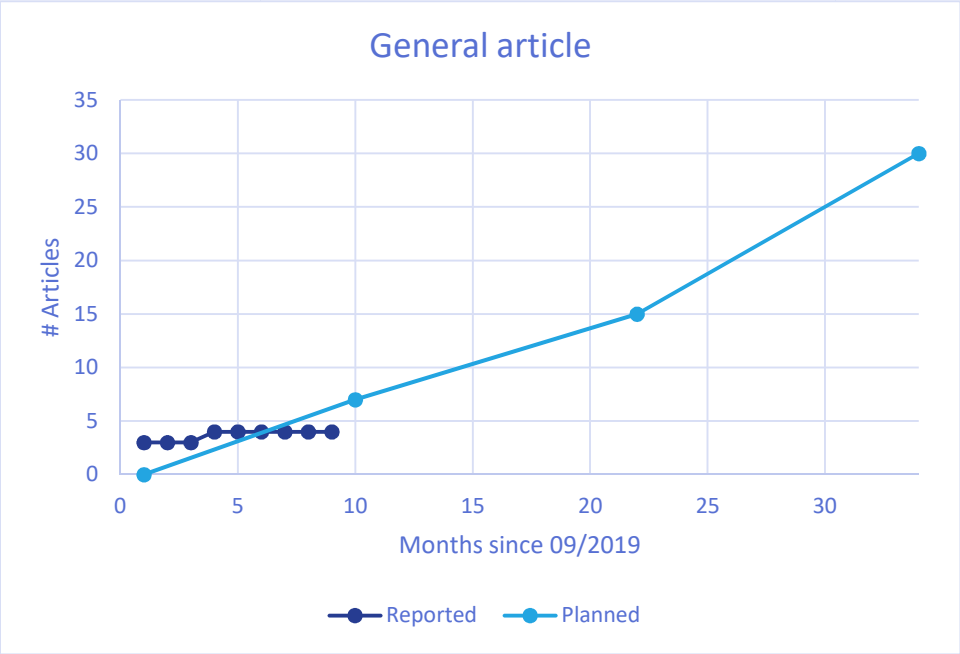

Figure 16. Number of general articles

The number of general articles on our project is developing as expected. We assume that a considerable amount of articles will be written in the upcoming phase as this KPI is driven by the industrial partners that need first to implement the outcomes of the academia partners.

3.6. PRESS RELATIONS

3.6.1. CREATED PRESS RELEASES

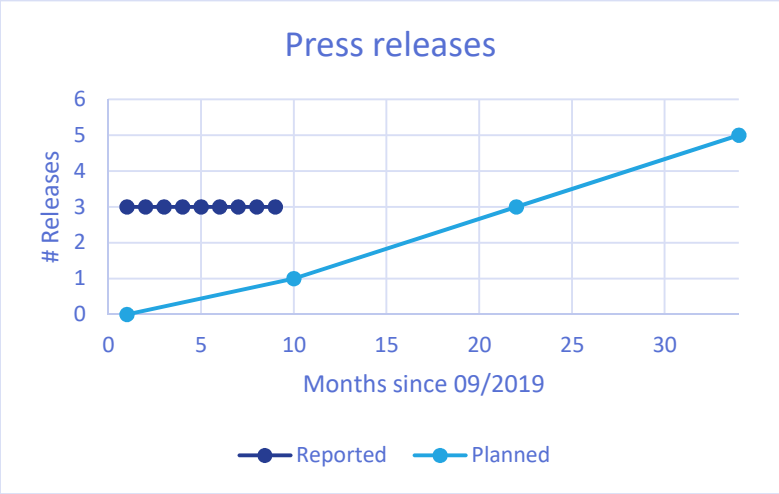

Figure 17. Number of press releases

This KPI is developing good and as expected. The next press release will be announced published in September to illustrate the improvements made during the last year.

3.6.2. PRESS CLIPPINGS PER PRESS RELEASE

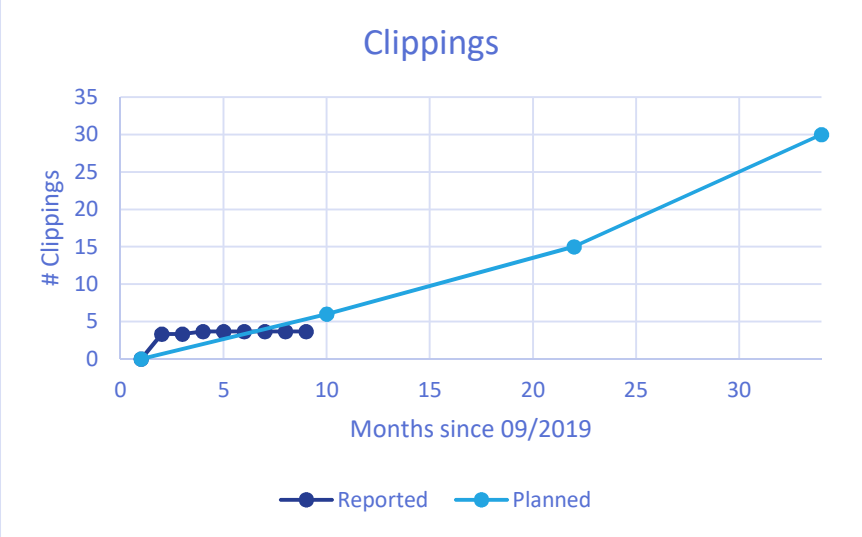

Figure 18. Progress of press clippings

The number of clippings is developing as expected. However, it will be challenging to achieve higher clipping rates as it is a demanding task to recognise all clippings.

3.7. CONSORTIUM PARTNERS INDIVIDUAL CONTRIBUTION

3.7.1. SIMAVI

SIV promised to "disseminate the results of the project to the Romanian ICT industry via national events (Scientific Research and New Technologies Bucharest, International Technical Fair Bucharest). Present the project results to critical infrastructure operators in Central & Eastern Europe (in finance and other industries). Organize cybersecurity workshops in Central & Eastern Europe."

Table 3. Quantitative analysis SIV

Category	Promised	Realized		
		M12	M24	M36
Dissemination at national events	Not specified	0		
Present project to critical infrastructure operators	Not specified	0		
Cybersecurity workshops	Not specified	1		

3.7.2. PSI

PSI promised to "participate in minimum 2 university seminars related to the energy sector. Present and publish white papers in the yearly User Group Meeting for PSI Network Manager users that normally is attended by representatives from approximately 40-50 TSO/DSOs. Arrange the session/seminar all to be open for any TSO."

Table 4. Quantitative analysis PSI

Category	Promised	Realized		
		M12	M24	M36
Participate in university seminars	2	0		
Present white papers in user group meeting	3	0		

3.7.3. SIGA

SIGA promised to "present the project results (anomaly detection) to at least 3 cybersecurity conferences. Publish articles in at least three relevant industry magazines."

Table 5. Quantitative analysis SIGA

Category	Promised	Realized		
		M12	M24	M36
Present at cybersecurity conferences	3	2		
Publish in relevant industry magazines	3	0		

3.7.4. FOR

FOR promised to "present project results (vulnerability assessment) at least 3 cybersecurity conferences. Publish articles in at least three relevant industry magazines."

Table 6. Quantitative Analysis FOR

Category	Promised	Realized		
		M12	M24	M36
Present at cybersecurity conferences	3	0		
Publish in relevant industry magazines	3	0		

3.7.5. L7D

L7D promised to "present project results to the EPES sector in Israel and Luxembourg (where L7D just opened an office)."

Table 7. Quantitative Analysis L7D

Category	Promised	Realized		
		M12	M24	M36
Present to the EPES sector	Not specified	0		

3.7.6. TEC

TEC promised to "present at industry forums and write a white paper which can help the prospective customers to understand the novelty of the homomorphic encryption methods."

Table 8. Quantitative Analysis TEC

Category	Promised	Realized		
		M12	M24	M36
Present at industry forums	Not specified	0		
Write white paper	1	0		

3.7.7. KT

KT promised to "participate in relevant infosec conference such as InfoSecurity Europe, Cybersecurity for Industrial Environments and Critical Infrastructures, Cybersecurity for Critical National Infrastructure (CNI) Symposium."

Table 9. Quantitative Analysis TEC

Category	Promised	Realized		
		M12	M24	M36
Participate in infosec conference	Not specified	1		

3.7.8. CITY

CITY promised to "present the project findings at minimum 3 conferences. Publish at least 3 peer-reviewed articles in open access journals. Include the project outcome into our MSc Cyber Security and MSc Internet of Things programmes."

Table 10. Quantitative Analysis CITY

Category	Promised	Realized		
		M12	M24	M36
Present at conferences	3	2		
Publish journal articles	3	0		

Include outcomes into teaching programmes	Not specified	0		

3.7.9. KTH

KTH promised to “publish 2 international conference or workshop papers per year. Publish at least 3 peer-reviewed articles in open access journals. Involve at least 1 PhD student and possibly one post-doc in the project. Present results at various local (non-academic) forums such as Dataföreningen, IVA and at academic conferences and workshop.”

Table 11. Quantitative Analysis KTH

Category	Promised	Realized		
		M12	M24	M36
Present at conferences	6	1		
Publish journal articles	3	0		
Involve PhD student	1	2		
Present at local forums	Not specified	4		

3.7.10. NTUA

NTUA promised to "disseminate the project results through at least 4 presentations to selected international workshops, conferences, symposia or exhibitions (at least 5 during the lifecycle of the project). Publish at least 3 peer-reviewed articles in open access journals.”

Table 12. Quantitative Analysis NTUA

Category	Promised	Realized		
		M12	M24	M36
Present at conferences	5	1		
Publish journal articles	3	0		

3.7.11. SC

SC promised to “present the project results in several national and international smart grid conferences, as well as publish articles in at least 3 relevant industry magazines.”

Table 13. Quantitative Analysis SC

Category	Promised	Realized		
		M12	M24	M36
Present at conferences	Not specified	1		
Publish magazine articles	3	0		

3.7.12. BULGARIAN PARTNERS

VETS, CoTTP, ESO, CEZ, MIG, and DIL promised to "communicate project progress in at least 3 internal presentations and at least 3 external conferences in the energy sector and/or innovation fields. Work with ENTSO-E to disseminate the project results to other European TSOs."

Table 14. Quantitative Analysis Bulgarian Partners

Category	Promised	Realized		
		M12	M24	M36
Present at internally	3	0		
Present externally	3	1		
Collaborate with ENTSO-E	Not specified	0		

3.7.13. IREN

IREN promised to "Communicate project progress in at least 3 internal presentations and at least 3 external conferences in the utility and/or innovation fields."

Table 15. Quantitative Analysis IREN

Category	Promised	Realized		
		M12	M24	M36
Present at internally	3	0		
Present externally	3	0		

4. CONCLUSION

The **selected means of dissemination** are appropriate for EnergyShield project and continuous progress per KPIs was registered. The performance of KPIs is different considering the channels of distribution.

The versatility of social media tools like Twitter has supported the efforts of Consortium partners, increasing the visibility of EnergyShield project and also fed the project with information about relevant online events. To the other end the number of users subscribing to our project newsletter remains low. To improve this consortium partners were invited to subscribe to share the subscription page with their contact to increase this number.

COVID-19 pandemic has forced adjustments in the dissemination strategy as the presence to large events became impossible. This means that printout materials are no longer relevant in EnergyShield dissemination plan.

To continue ensuring dissemination of the project, the dissemination materials have been share via EnergyShield webpage and distributed via social media channels. Furthermore, Consortium partners are encouraged to attend and initiate digital events to share information about the project achievements. Workshops and webinars were planned for the next coming period to increase project visibility, to indentify collaboration opportunities with other projects and to extend the stakeholders network.

REFERENCES

[ESH20] EnergyShield Consortium, (2020), D7.2 Communication Report v1
[ESH19] EnergyShield Consortium, (2019), D7.4 Dissemination Plan

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