

D6.1. Awareness of the project raised, project results disseminated

ESSENCE: Establishing Smart Energy System Curriculum at Russian and Vietnamese Universities

Project number: 586087-EPP-1-2017-1-LV-EPPKA2-CBHE-JP (2017-3017/001-001)

Key Action 2: Cooperation for innovation and the exchange of good practices.

Capacity building in the field of higher education

Responsible Partner: Organization – P5, INRTU (Irkutsk National Research Technical University)

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Document History

Version	Date	Contributor	Comments
1v	28.07.2021	INRTU — Varvara Panko	Report structure
2v	15.08.2021	INRTU — Varvara Panko	Report structure, introduction
3v	01.10.2021	INRTU — Varvara Panko	Main part, conclusion
4v	01.10.2021-10.10.2021	All partners	
5v	14.10.2021	INRTU — Varvara Panko	Final version

List of Abbreviations

Abbreviation	Definition
CBHE	Capacity building in the field of higher education
EACEA/ Agency	Education, Audiovisual & Culture Executive Agency
EC	European Commission
P1 / RTU	Riga Technical University; PIC 999920718
P2 / Grenoble INP	Institut Polytechnique de Grenoble; PIC 999875225
P3 / TUKE	Technical University of Košice; PIC 999839238
P4 / TPU	Tomsk Polytechnic University; PIC 997438488
P5 / INRTU	Irkutsk National Research Technical University; PIC 941879895
P6 / UrFU	Ural Federal University named after the first President of Russia B.N.Yeltsin; PIC 963580347
P7 / KSPEU	Kazan State Power Engineering University; PIC 916033857
P8 / NEFU	North-Eastern Federal University; PIC 967900436
P9 / HCMUTE	Ho Chi Minh City University of Technology and Education; PIC 923816846
P10 / HUMG	Hanoi University of Mining and Geology; PIC 922118085
WP	Workpackage

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1. Introduction

Dissemination is a key concept in the world of European projects including Erasmus+ ones. Dissemination is important, multifaceted, and project-wide; it requires careful planning, enough resource allocation, and ongoing realization not only during but also before and after project lifetime.

Dissemination activities within ESSENCE project have been planned and realized with account to the above mentioned:

- Each partner is fully aware of importance of dissemination for project successful realization and further sustainability;
- ESSENCE partners implemented dissemination actions before, during and after project lifetime;
- Dissemination ideas and plans outlined in the project proposal have been transformed into “ESSENCE dissemination and exploitation strategy” followed by all project partners;
- Resources have been allocated for dissemination activities: staff costs, travel costs and cost of stay for each partner, subcontracting costs (development of project website, promo materials);
- All project activities (even those not from dissemination WP) had dissemination and/or exploitation aim in their background.

The present report gives further details about dissemination within ESSENCE project: dissemination strategy, dissemination aims and objectives, dissemination tools and actions. The annexes give specific details about products and actions.

ESSENCE project partners are fully aware of and carefully followed requirements on dissemination, exploitation and visibility stated in the Grant agreement and Partnership agreement: I.10.8. Dissemination and exploitation of results; I.10.9. Publicity obligations; I.10.10. Penalties in the case of non-compliance with publicity obligations; II.7. Visibility of union funding.

2. ESSENCE dissemination and exploitation

Key aspects of ESSENCE dissemination process

For dissemination activities, project partners are guided by “**ESSENCE dissemination and exploitation strategy**” (Annex 1) supported by ESSENCE Project Manual as well as the description of the WP6 “Dissemination and exploitation of project results” in the project proposal. The Strategy was developed during the first year of project lifetime, regularly revised and updated in its third year when substantial changes in project realization took place and a 1-year extension was granted to the project due to COVID-19 pandemic.

Following the Strategy, project partners organized dissemination and exploitation on different **levels**:

- department,
- institutional,
- local,
- regional,
- national,
- international.

The main **target groups** for the dissemination activities have become:

- staff of partner universities: university top-managers, project teams, other academic and non-academic staff;
- current students of partner universities;
- prospective students of modernized master programs from both partner universities and HEIs all over the world;
- higher education community: academic and non-academic staff at HEIs in Russia, Vietnam and other countries;
- industry: managers and engineers from SES enterprises and companies;
- wide public.

Dissemination and exploitation was carried out through various **channels** and with different **tools** including:

- Project website;
- Partners' websites;
- Social networks (Facebook, Instagram, YouTube);
- Newsletter;
- ESSENCE project logo;
- Promotional materials;
- Information sessions;
- Mass media (on-line and printed newspapers and magazines; video, TV etc);
- Conferences / workshops / meetings / presentations;
- Final dissemination conference;
- Open-door events, educational fairs, job fairs.

The Strategy clearly defined what, how, when to whom and where should be communicated. I.e. project activities, outputs and outcomes were carefully linked to respective target groups; the latter were correlated to appropriate tools and channels and finally adjusted to a certain timeline. Thus, consortium members had a detailed **“Project results dissemination and exploitation plan”** to follow (Annex 1).

Coordination of dissemination and exploitation activities of the whole project was carried out by P5/INRTU while the responsibility for implementation was shared among all partners. Each partner was involved in these activities according to the needs and roles in the project guided by “Project results dissemination and exploitation plan”.

Aims of dissemination activities

ESSENCE dissemination and exploitation strategy outlined the number of aims for dissemination actions that have been reached by partners as follows:

- **raise awareness of the project:**

This was reached through publication of press-releases, news, popularized publications and similar on project website, partners’ websites, social media, other mass media; project newsletters; project presentation at the events of different level; information sessions for different target groups; distribution of promotional materials. The activities associated with raising awareness have been carried out before the project official launch (development of project proposal with respective departments at partner universities; signing of project related documents by university top management), during the whole project lifetime, and beyond (publication of follow-up news; communication between consortium members re further cooperation opportunities; building up new partnerships). In the whole, ~ 200 pieces of information have been published, ~20 presentations with over 1500 participants have been carried out; 6 newsletters have been compiled and sent to 183 subscribers; over 2600 people (university top managers, academic and non-academic staff, representatives of industry and higher education community, students) have become immediate participants of organized information sessions at RU and VN partner universities. ESSENCE project website has 61203 visitors, 267278 visits/hits; Project page in FB has 125 followers, 109 page likes, 77 posts with 3470 people reached; ESSENCE Summer School groups in FB has 89 members, 38 posts with over 2000 people reached) and Instagram account has 40 subscribers, 35 posts; ESSENCE YouTube channel has 24 videos uploaded.

- **exploit project results, share solutions;**

The project produced a number of outputs and outcomes that has been not only disseminated but also exploited on different levels, mainly department and institutional ones: results of survey of projects’ stakeholders on curriculum implementation quality have been discussed with university administration of different level to produce correction plans if needed; peer-reviewed syllabi and teaching materials for 10 courses have been used for modernization of existing and development of new programs (master level, professional development, academic

mobility, internships, MOOC); enhanced competences in subject area, curriculum development and teaching techniques have been used to organize respective trainings as well as to produce educational programs of high quality; QA procedures for the future have been introduced to university administration of different level to adapt them for other programs; and some others.

- **extend the impact;**

Due to dissemination and exploitation activities, the impact of ESSENCE project on participating universities (especially RU and VN ones) has been maximized: benefits of participation in EU funded projects became clear to university top management; EU practices of curriculum development (principles of Bologna process, learning outcome approach, ECTS etc) and application of new teaching techniques have been used for project realization, development of other programs as well as communicated to other university staff; QA mechanisms (peer-review of syllabi and teaching materials, survey of program stakeholders, QA procedures to ensure the quality of educational programs realization in the future) have been used for project realization as well as communicated to university staff.

- **engage stakeholders and target groups;**

Careful selection of tools and channels has been used to reach out and engage project stakeholders and target groups and maximize the efficiency of project activities. A series of information sessions, website and social media, surveys, newsletters, presentations, promotional materials, final conference have been used to inform and engage university staff (top management, academic and non-academic staff). Industrial partners were informed and involved through information sessions, final conference, website, promotional materials, newsletters, presentations as well as via other ESSENCE activities (peer-review of teaching materials, needs analysis and QA surveys). Students of partner and non-partner universities have been engaged through information sessions, website and webpages, social media, promotional materials as well as through participation in courses/program pilot implementation. The consortium has also addressed the wider academic community through project presentation at different events (conferences, meeting, seminars, round-table discussions).

- **develop new partnerships and others.**

ESSENCE project has become the basis for the development of new partnerships and projects. For more information refer to D6.2.

ESSENCE dissemination tools and actions

Project website, partners' websites

ESSENCE project website (essence-erasmus.org) has become one of the main tools to communicate about the project to all target groups. It was developed and launched at the end of May 2018 with the following information available: project aims and objectives, short project description, project partners, WP description, news and events, publications of project related information by partners, project

progress and results, visual identity and some others (Figure 2.1). In February 2019, Russian and Vietnamese versions of the website have become available along with the English one.

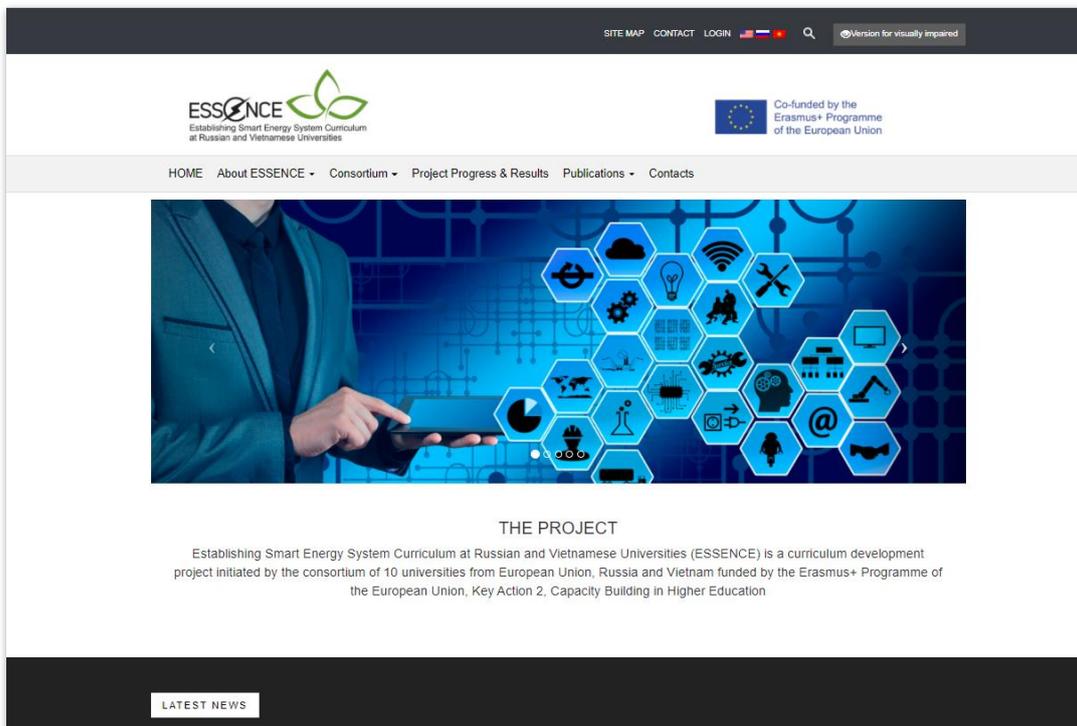


Figure 2.1 Homepage of ESSENCE project website (old version)

In November 2020, the modernization of project website began following the recommendations of NEO Russia monitoring results. Website structure, design, content have been fully revised to make the website more attractive for users, to better present the project results and in general to prepare the website for efficient functioning after project eligibility period is over (Figure 2.2).

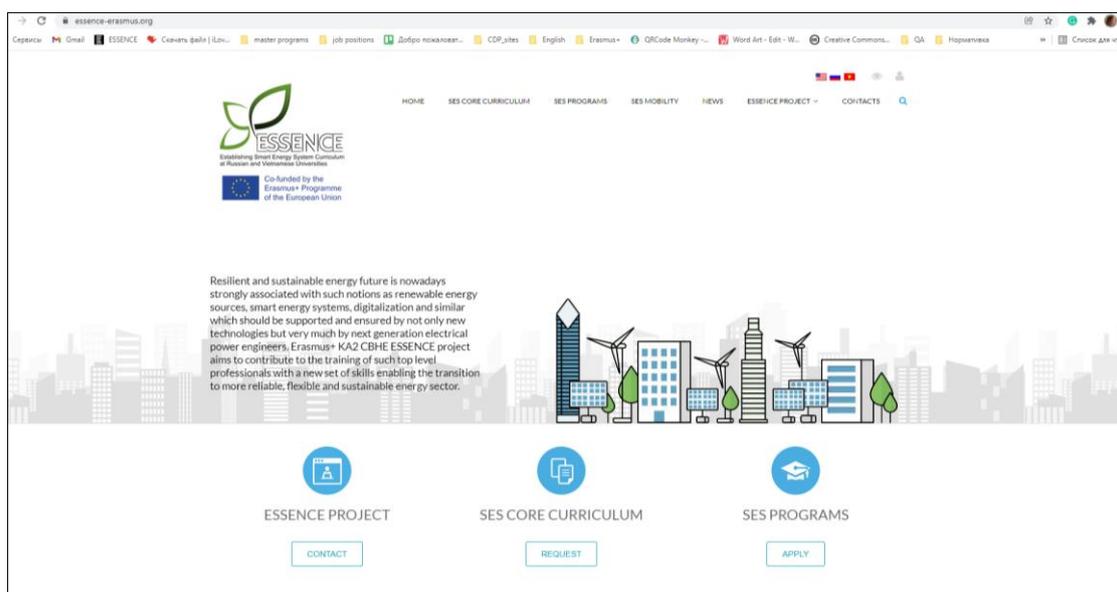


Figure 2.2 Homepage of ESSENCE project website (modernized version)

The updated version focuses on presentation of main project results and outcomes and contains the following sections and information: home, SES core curriculum, SES program, SES mobility, News, ESSENCE project, Contacts (Figure 2.3)

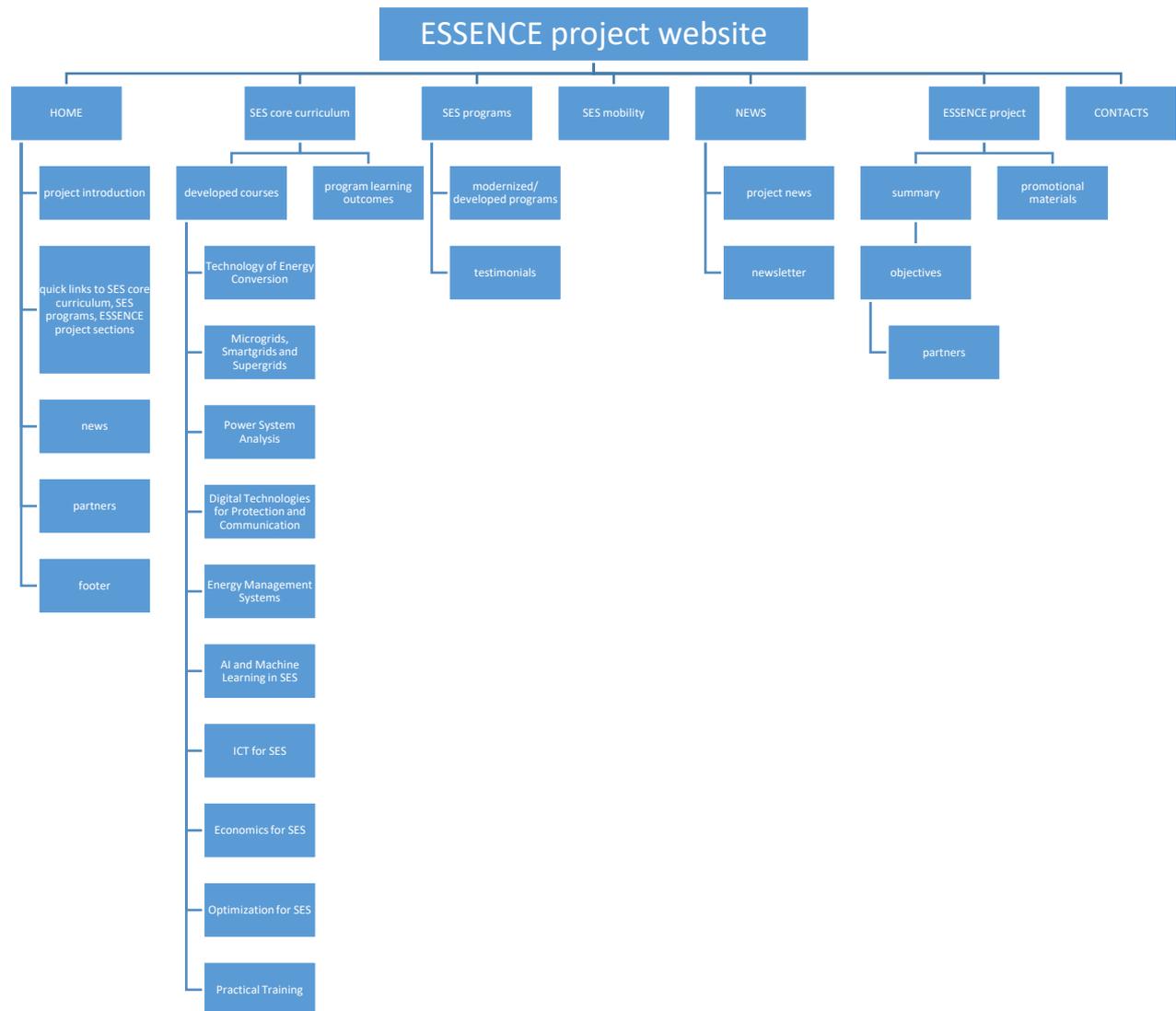


Figure 2.3 ESSENCE project website tree

The sections contain the following information:

- SES core curriculum: list of learning outcomes for SES core curriculum, list of developed courses, syllabi for courses along with the request form for teaching materials. On the page of each course, there is a video lecture (course “teaser”) covering one of the course topics
- SES programs: the table of ESSENCE programs (long-term and short-term, newly launched and modernized) with summary and basic information (type, duration, # of ECTS, mode, language of instruction). Each program has furthermore a 1-page detailed description with up-to-date links to home university websites and/or

respective contacts. There are furthermore testimonials of ESSENCE program participants available on the page.

- SES mobility section gives an overview of established contacts within ESSENCE consortium; contact details of partners' academic mobility coordinators and/or links to partners' website academic mobility sections are also available.

- News: project related news, newsletters.

- ESSENCE project section gives basic information about the project: summary, objectives, partners as well as selected deliverable reports. Developed promotional materials are available for download in this section as well.

- via contact form in the section "Contacts" it is possible to get in touch with any of partners.

The web-site is available in 3 languages: EN (with the most information), RU and VN (key information).

The old version of the website is available on old.essence-erasmus.org.

In the period from May 2018 till November 2021 ESSENCE project website has had 61203 visitors, 267278 visits/hits.

To assist project management and ensure secure material exchange, a password protected area on the website was organized where partners store and exchange project related documents (Figure 2.4, Figure 2.5). Each partner has login and password to access the internal space as well as to update selected website pages and publish news.



Figure 2.4 Password-protected access to internal website

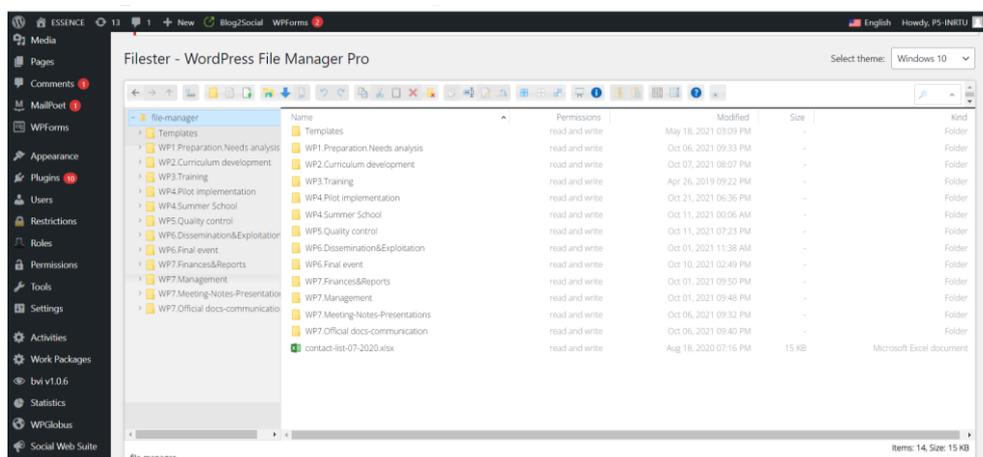


Figure 2.5 Internal website organization

The partners have established project webpages at their home university websites in national and/or national and English languages (Figure 2.6):

P1/RTU: <https://projekti.rtu.lv/external/rtu-projektu-publicitate/Eiropas%20teritori%C4%81l%C4%81s%20sadarb%C4%ABbas%20programmas%20projekti/Establishing-Smart-Energy-System-Curriculum-at-Russian-and-Vietnamese-Universities.php>

P3/TUKE: <http://people.tuke.sk/dusan.medved/ESSENCE/>

P4/TPU: <http://iso.tpu.ru/magistracy/ESSENCE/>

P5/INRTU: http://www.istu.edu/deyatelnost/mezhdunarodnaya_deyatelnost/proekty/erasmus_essence_project?lang=ru (RU); <https://eng.istu.edu/international/international-projects/erasmus-key-action-2/> (EN)

P6/UrFU: <https://openedu.urfu.ru/files/erasmus/> (RU)

P7/KSPEU: <https://kgeu.ru/Section?idSection=8&idSectionMenu=272>

P8/NEFU: <https://www.s-vfu.ru/universitet/rukovodstvo-i-struktura/instituty/fti/Erasmus/>

P9/HCMUTE: <http://iro.hcmute.edu.vn/ArticleId/78062c7b-61d7-4de6-80c0-019a21d7759b/capacity-building-project-on-establishing-smart-energy-system-curriculum-at-russian-and-vietnamese-universities>

P2/Grenoble INP has listed the ESSENCE project in the international grant inventory: <https://www.grenoble-inp.fr/fr/international/les-projets-erasmus>.

P10/HUMG placed the banner with EU and ESSENCE logos on the home page of the P10 website (EN version) with the direct link to project website: <https://humg.edu.vn/en/Pages/home.aspx>

The image displays three overlapping screenshots of the ESSENCE project website. The top-left screenshot is from RTU, showing the project title 'Информация о проекте ESSENCE' and details in Russian. The top-right screenshot is from TPU, showing 'INFORMĀCIJA PAR PROJEKTU' and details in English. The bottom screenshot is from INRTU, showing 'Project name / acronym: ESTABLISHING SMART ENERGY SYSTEM CURRICULUM AT RUSSIAN AND VIETNAMESE UNIVERSITIES / ESSENCE' and details in English. The pages include logos for the project, the European Union, and the participating universities.

Figure 2.6 ESSENCE project pages on P1/RTU, P4/TPU and P5/INRTU websites

ESSENCE logo and templates

ESSENCE logo (old and modernized) was developed to help to promote public identification and recognition of the project (Figure 2.7, Figure 2.8).



Figure 2.7 ESSENCE logo (old)



Figure 2.8 ESSENCE logo (modernized)

To ensure the proper use of the logo, the brand book was compiled (Figure 2.9).



Figure 2.9 ESSENCE logo brand book (selected pages)

Different templates (event agenda, participant list, deliverable report etc) with EU-funding acknowledgment, ESSENCE logo have been developed and uploaded to internal website to be used by partners.

Social media

Among the variety of social media channels, ESSENCE consortium picked up Facebook (FB) due its popularity in all ESSENCE countries (France, Latvia, Russia, Slovakia, and Vietnam). A FB group was created where project news, announcements were published and shared: facebook.com/essencerasmus/ (Figure 2.10).

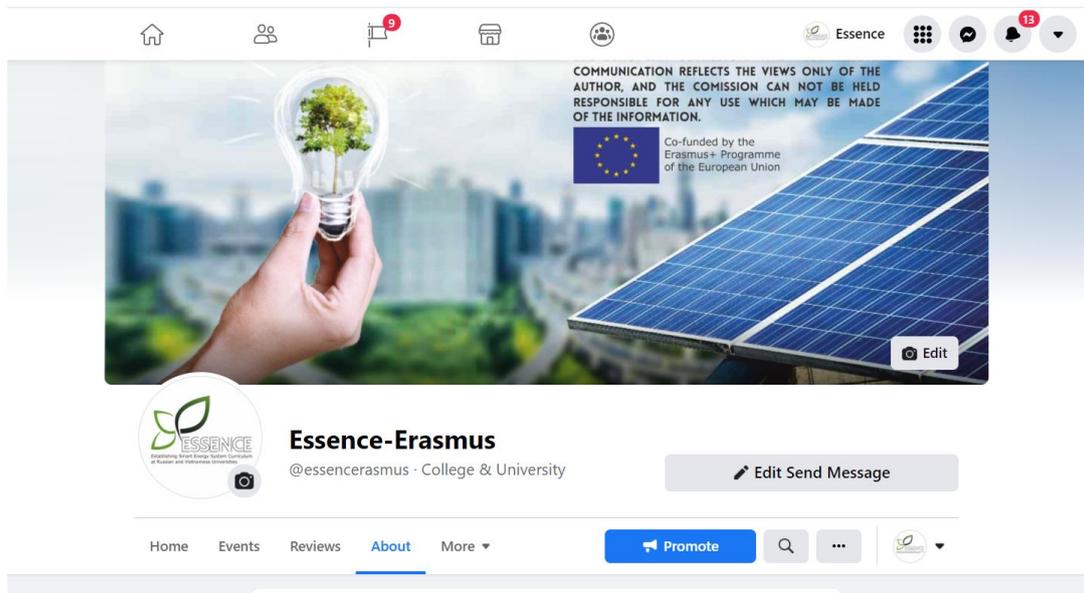


Figure 2.10 ESSENCE project Facebook page

During the project lifetime and beyond, the page has gained 125 followers and 109 page likes, there were published 77 posts with 3470 people reached.

To promote ESSENCE Summer School activities and assist the information exchange, groups in Facebook (facebook.com/groups/essencesummerschool) and Instagram (instagram.com/essence_summer_school) were established and supported from June till August 2021 (Figure 2.11). ESSENCE Summer School groups in FB has 89 members, published 38 posts that reached over 2000 people; Instagram has 40 subscribers, published 35 posts.

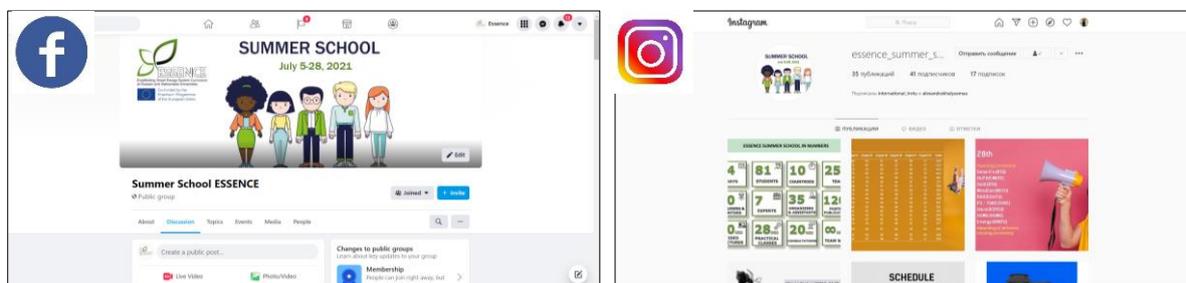


Figure 2.11 ESSENCE Summer School groups in Facebook and Instagram

ESSENCE YouTube channel (Figure 2.12) was created (youtube.com/channel/UCJAn2FKq6FXL3g4RjKNAMfg/featured) to share ESSENCE related video: ESSENCE promo video, ESSENCE final conference, ESSENCE Summer School video lectures and others.

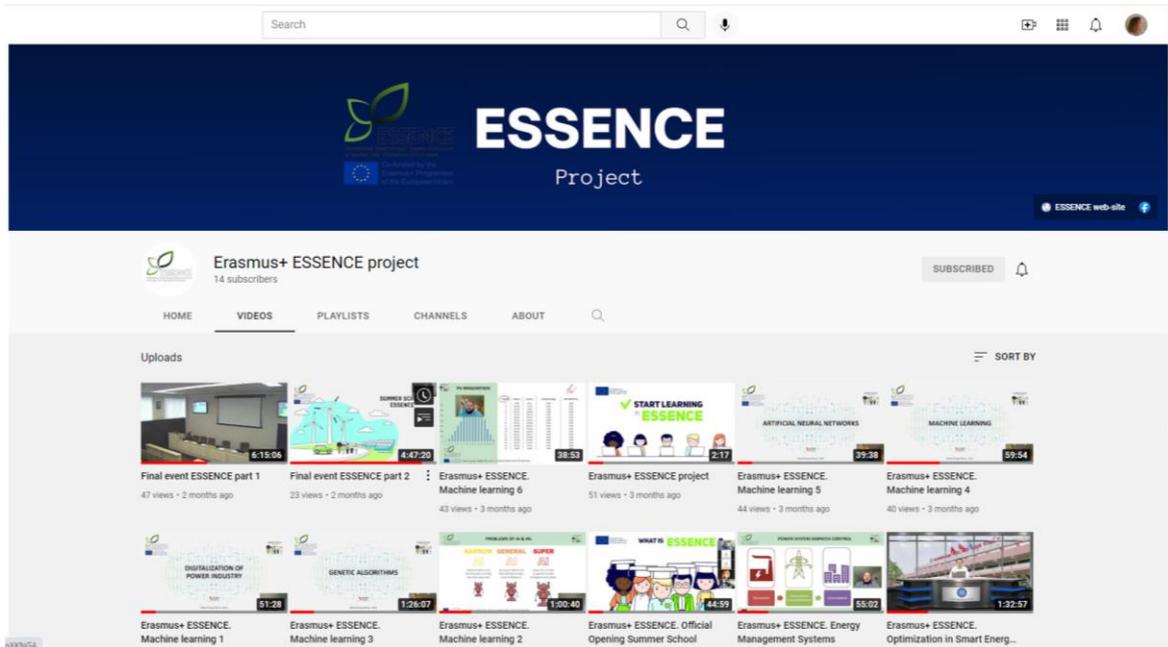


Figure 2.12 ESSENCE YouTube channel

Promotional materials

For dissemination purposes as well as to ensure the project visibility, several sets of promotional materials have been developed (Annex 2):

- project promotional materials: flyer A5, leaflet A4, roll-up, poster A3, title screen;
- program promo materials: leaflet A4, roll-up;
- animated promo video about SES master program (ESSENCE project homepage, youtube.com/watch?v=ADS5znmLG0Q&t=66s).

The promo materials have been adapted by each partner, printed out and widely distributed to ensure the visibility of the EU-funded project, to recruit for ESSENCE programs (Figure 2.13).



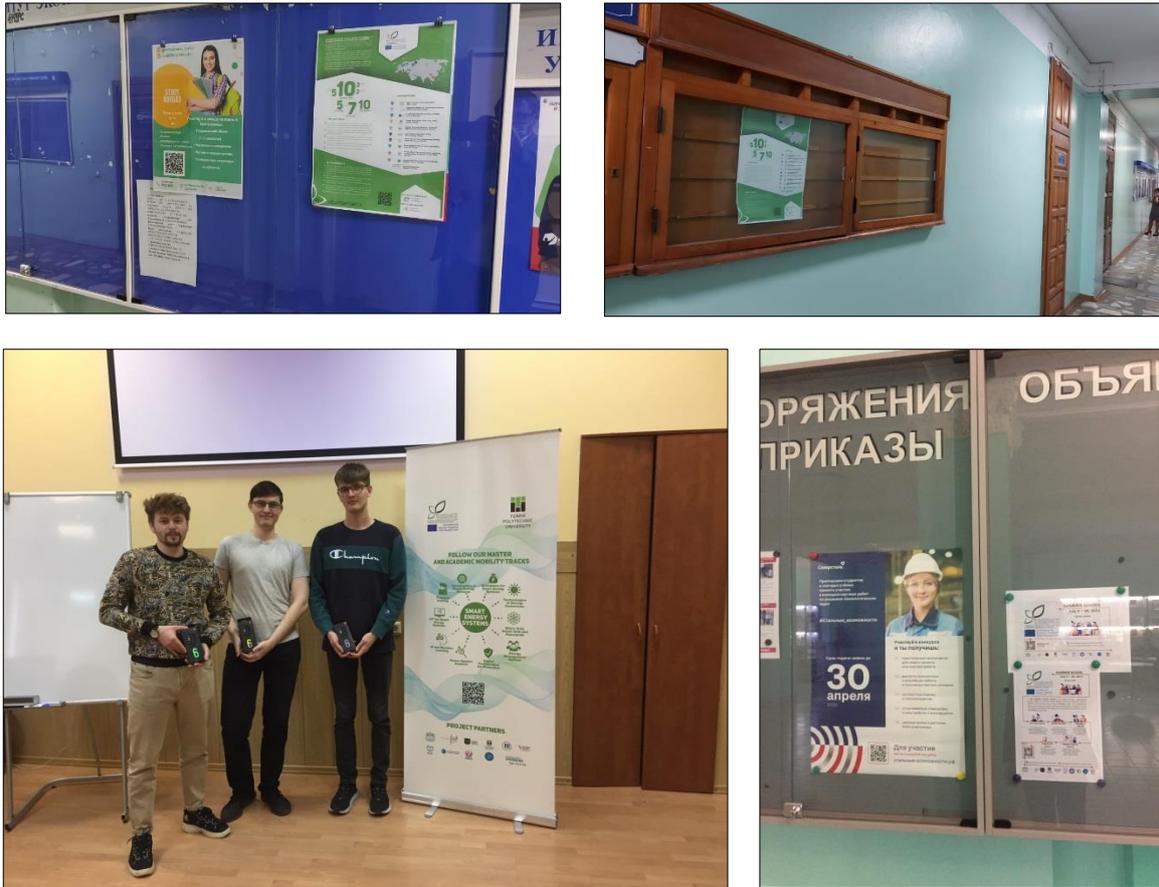


Figure 2.13 Promotional materials at partner universities

Written dissemination

Newsletters

Project newsletters announce the project, give regular updates on its implementation, focus on extraordinary events, and showcase project results. During the project lifetime, six newsletters have been published (Annex 3). Newsletters in pdf-format are available for download on project website, have been advertised on project Facebook page; e-Newsletters were sent to subscribed users. MailChimp service was used to enable the subscription, compile mailing lists (183 subscribers) and carry out mailing campaigns.

Published news and press-releases

Publication of news on project upcoming and past activities on project website, partner universities' websites, social and other media has become one of the main tools to raise awareness about the project, inform external audience about project realization and its results. During project lifetime and beyond, over 200 pieces of news have been published and reposted (Annex 4).

Popularized publications

Extended information about the project was published in university/local newspapers, internet portals etc (Annex 4).

Information sessions and project presentations

A series of information sessions was held at each university in partner countries (P4-P10) (Annex 5). Partners used different formats for sessions holding: onsite, online, guest presentations, presentations within larger events (conferences, educational and job fairs), webinars etc.

The first information session was targeted to academic and non-academic staff of partner universities with the aim to inform them about the project, its objectives, expected and achieved results. Special efforts have been laid to attract university top management and administration to ensure their support and involvement. Around 365 staff at P4-P10 participated in the events (Figure 2.14).



Figure 2.14 Information sessions for University staff at P10/HUMG and P5/INRTU

The second information session was aimed at industrial partners to inform them about the project, its flow and results, expectations of universities on industry involvement and contribution to the project. Over 440 persons from industry have become participants of information sessions (Figure 2.15).

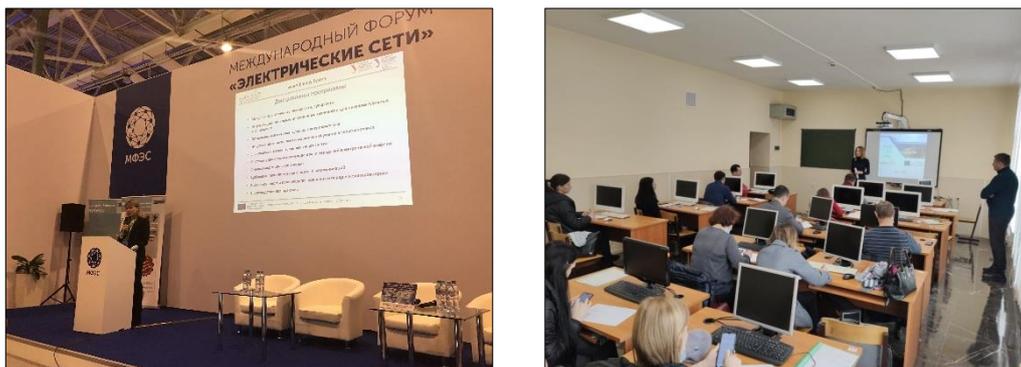


Figure 2.15 Information sessions for industry representatives of P6/UrFU and P7/KSPEU

And finally, RU and VN partners organized a series of sessions for students to recruit them for ESSSENCE programs. Partners used different formats to adjust to the audience and circumstances: onsite presentations were mainly used to recruit local students for the programs; online sessions and webinars were conducted for foreign prospective students as well as local ones under pandemic restrictions; job fairs have also become a fruitful ground to inform graduating bachelor students about prospective master degree programs. Information sessions for students reached

over 4000 people: around 3000 were immediate participants of onsite and online events while others were informed through leaflets and banners at job fairs (Figure 2.16).

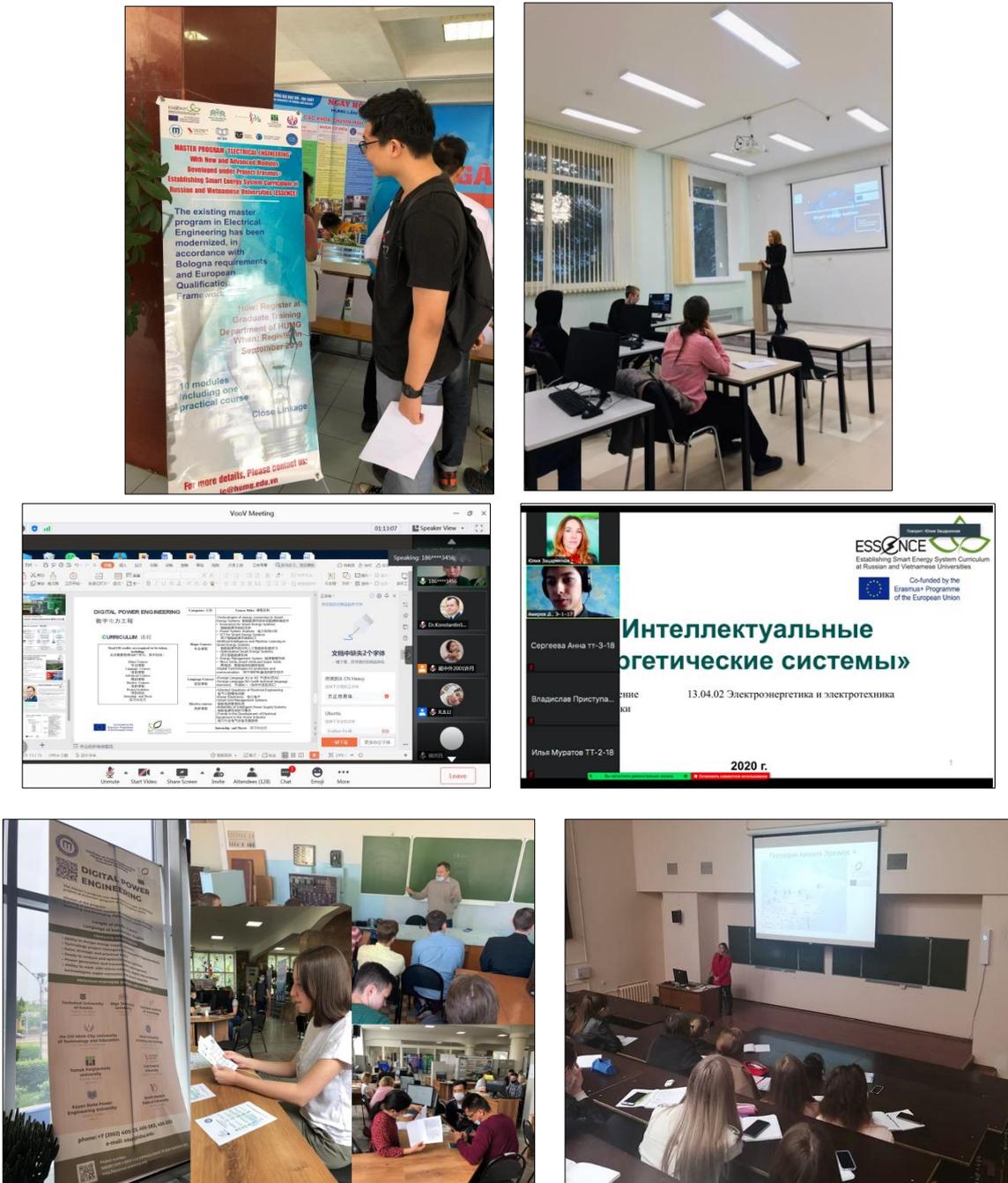


Figure 2.16 Information sessions for students at P10/HUMG, P7/KSPEU, P5/INRTU

Final dissemination conference

To summarize project outcomes and outputs, to present them to stakeholders and wider audience, to share experience of Erasmus+ project realization, to outline project impact on participating universities, the final dissemination conference was held at the end of the project lifetime, on September 27-28, 2021 (refer to Annex 6 for conference agenda). Initially planned as an onsite event, due to COVID-19

restrictions, the conference was organized in blended format at P6/UrFU. Onsite participants have become ESSENCE project team members from P4/TPU, P5/INRTU, P7/KSPEU as well as P6 academic staff, industrial partners and students. Project team members from P1/RTU, P2/Grenoble INP, P3/TUKE, P8/NEFU, P9/HCMUTE and P10/HUMG along with staff and students of all partners have joined the conference on Zoom platform. The conference was also attended by the representative of Russian National Erasmus+ Office, staff of other HEIs. The overall number of ESSENCE final event participants was 270 persons (120 onsite and 150 online attendees).

The main goal of the final dissemination conference was not only to present ESSENCE results but also to initiate the discussions between stakeholders regarding current state, trends and challenges of engineering education in Russia and Vietnam as well as to provide the ground for fruitful networking of representatives of academia, industry and society.

There were five sections at the conference: 1) Trends of power engineering education; 2) Relevance of engineering higher education to labor market; 3) Quality assurance in engineering education; 4) ESSENCE project dissemination and sustainability; 5) Best Erasmus+ practices. The first three sections addressed different aspects of engineering education in Russia and Vietnam as well as ESSENCE project in this context. Invited speakers – University managers, industry representatives, QA agency staff – talked about current trends and challenges of engineering education, industry expectations from HE sector, QA issues. While ESSENCE project team members reported how ESSENCE project contributed to the above mentioned aspects. The fourth section was more project specific: it gave the overview of ESSENCE project spin-offs, addressed project sustainability as well as dissemination activities. And finally, conference attendees were invited to know about other Erasmus+ projects in Russia and Vietnam and their impact on HEIs (cross-fertilization section).

ESSENCE Summer School

Not being a purely dissemination action like final conference or information sessions, ESSENCE Summer School has nevertheless become one of the most successful events of the project in terms of dissemination. A special dissemination strategy for the Summer School was developed and carefully followed:

- for the recruitment campaign, promotional material templates (flyers, banners) were developed;
- branded handouts (T-shirts, hoodies, pens, bags, notebooks) for participants and prizes for winners were produced (Figure 2.17);



Figure 2.17 ESSENCE Summer School branded handouts and prizes

- templates for video lectures and presentations have been developed to make the materials recognizable and associated with ESSENCE project and Summer School (the videos are uploaded to ESSENCE YouTube channel and also used as teasers for developed courses on ESSENCE project website);
- a series of publications in different media (project website and FB account, partners' website and social media) were produced by each partner to promote the event;
- to promote ESSENCE Summer School activities and assist the information exchange, groups in FB (facebook.com/groups/essencesummerschool) and Instagram (instagram.com/essence_summer_school) were established and supported from June till August 2021 (Figure 2.18). ESSENCE Summer School groups in FB has 89 members, published 38 posts that reached over 2000 people; Instagram has 40 subscribers, published 35 posts.

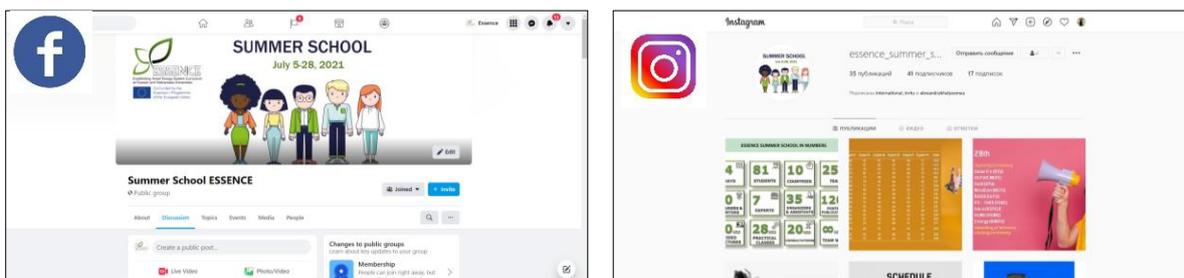


Figure 2.18 ESSENCE Summer School groups in Facebook and Instagram

- as a follow-up, special issue of ESSENCE Newsletter was published and distributed among subscribed users.

Conferences, workshops, seminars

ESSENCE partners used opportunities to present the project at the events of different levels: starting from local seminars, workshops, and department meetings up to large international conferences. Totally, ESSENCE project was communicated to over 3400 persons at around 20 national/international events as well as at over 40 department/institute meetings (Annex 7).

3. Conclusion

The consortium reached aims and objectives regarding dissemination and exploitation set in the proposal:

- project website (essence-erasmus.org) is prepared for operation after project eligibility period during min. 3 years; it is up-to-date, contains information about the project and produced results, contact details of partners; supplied with all necessary logos and the disclaimer;
- project webpages are available at partners' websites and/or the project is listed among partner's international projects with direct link to project website;
- project related information is published in different media throughout the whole project lifetime and beyond;
- promotional materials (program promo, promo video) have been developed and used to advertise ESSENCE programs;
- in the whole 58 information sessions were conducted (instead of 42 planned).

A number of actions – website modernization, special dissemination strategy for ESSENCE Summer School, extended number of information sessions, newsletters – were not initially planned in the proposal but very much amplified the dissemination impact.

ESSENCE

Dissemination and exploitation strategy

**ESSENCE: Establishing Smart Energy System Curriculum at
Russian and Vietnamese Universities**

Project number: 586087-EPP-1-2017-1-LV-EPPKA2-CBHE-JP (2017-3017/001-001)

Key Action 2: Cooperation for innovation and the exchange of good practices.

Capacity building in the field of higher education

Responsible Partner: INRTU – Panko Varvara

Authors: INRTU – Panko Varvara

Document History

Version	Date	Contributor	Comments
1v	28.08.2018	INRTU – Panko Varvara	
2v	03.09.2018	INRTU — Panko Varvara;	
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4v	20.10.2020	INRTU — Panko Varvara;	

List of Abbreviations

Abbreviation	Definition
CBHE	Capacity building in the field of higher education
EACEA/ Agency	Education, Audiovisual & Culture Executive Agency
EC	European Commission
EU	European Union
HEI	Higher educational institution
SES	Smart energy systems
P1 / RTU	Riga Technical University; PIC 999920718
P2 / Grenoble INP	Institut Polytechnique de Grenoble; PIC 999875225
P3 / TUKE	Technical University of Košice; PIC 999839238
P4 / TPU	Tomsk Polytechnic University; PIC 997438488
P5 / INRTU	Irkutsk National Research Technical University; PIC 941879895
P6 / UrFU	Ural Federal University named after the first President of Russia B.N.Yeltsin; PIC 963580347
P7 / KSPEU	Kazan State Power Engineering University; PIC 916033857
P8 / NEFU	North-Eastern Federal University; PIC 967900436
P9 / HCMUTE	Ho Chi Minh City University of Technology and Education; PIC 923816846
P10 / HUMG	Hanoi University of Mining and Geology; PIC 922118085

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Introduction

The dissemination and exploitation strategy of ESSENCE project consists in the performance of a number of activities from the very beginning of the project, throughout its whole life and after its completion with the aim to

- raise awareness of the project;
- exploit project results;
- extend the impact;
- engage stakeholders and target groups;
- share solutions and know how;
- develop new partnerships and others.

More information about the dissemination and exploitation strategy along with related Work Package 6 “Dissemination and exploitation of project results” description could be found in the Detailed description of the project (Annex I of the GA: Part G, WP6) and ESSENCE Project Manual (pp. 26-29).

Dissemination levels, target groups, channels, and tools

In order to be efficient, the type and intensity of dissemination activities have to be clearly specified by what, how, when to whom and where should be communicated/ transferred, i.e. dissemination levels, target groups, tools and timeline must be defined.

Dissemination and exploitation by ESSENCE project realization will be organized on different levels:

- department,
- institutional,
- local,
- regional,
- national,
- international

The main target groups for the dissemination activities will be:

- staff of partner universities: project teams, other academic and non-academic staff;
- current students of partner universities;
- prospective students of modernized master programs from both partner universities and HEIs all over the world;
- higher education community: academic and non-academic staff at HEIs in Russia, Vietnam and other countries;
- industry: managers and engineers from SES enterprises and companies;
- wide public.

Dissemination and exploitation will be carried out through various channels and with different tools. Table 1 gives their overview of tool/channels to be used by ESSENCE project realization for reaching out representatives of different target groups at different levels.

Table 1. Dissemination channels and tools

Tools and channels	Level	Target groups	Partners' involvement	Period
<p>Project web-site Project web-site is the main dissemination tool for the presentation of project flow and results. During the project life time the web-site focuses on the project realization and contains the following information: summary, objectives, WP description, consortium, project intended results, news, contacts etc. By the end of the project life, ESSENCE web-site is modernized to focus on project outcomes and outputs rather than project flow. The main emphasis is laid to developed teaching materials and new/modernized educational programs launched at RU and VN partner universities.</p>	Department Institutional Local Regional National International	Staff of partner universities; Current students; Prospective students; Higher education community; Industry; Wide public	All partners led by P5	May 2018 – October 2021
<p>Partners' web-sites Information about the project and its results as well as news on project realization are published on ESSENCE partner universities web-sites.</p>	Department Institutional Local Regional National International	Staff of partner universities; Current students; Prospective students; Higher education community; Industry; Wide public	All partners	October 2017 – October 2021
<p>Social networks Project page is created in Facebook and used to inform public at large about project activities and results. Partners' social network profiles are also used for dissemination purposes</p>	Department Institutional Local Regional National International	Staff of partner universities; Current students; Prospective students; Higher education community; Industry; Wide public	All partners led by P5	May 2018 – October 2021
<p>Newsletter Newsletter announces the project, gives regular updates on its implementation. Bi-annually, Newsletter pdf is posted at the project web-site while e-Newsletter is sent to subscribed users.</p>	Department Institutional Local Regional National International	Staff of partner universities; Current students; Higher education community; Industry; Wide public	P5 with all partners making contribution	June 2018 October 2018 April 2019 November 2019 September 2020 August 2021 October 2021
<p>ESSENCE project logo ESSENCE logo is developed to help to promote public identification and recognition of the project. Respective brandbook was also developed to ensure the proper use of the logo.</p>	Department Institutional Local Regional National International	Staff of partner universities; Current students; Prospective students; Higher education community; Industry; Wide public	P5	February 2018
<p>Promotional materials The following types of promotional materials are developed, printed out and distributed by partners: - promo materials for the project (booklet, flyer, poster, roll-up, title screen); - promo materials for programs (flyer, roll-up,</p>	Institutional Local Regional National International	Staff of partner universities; Current students; Higher education community; Wide public; Prospective students;	P6 for RU partners and P10 for VN partners	February 2019 - October 2021

Tools and channels	Level	Target groups	Partners' involvement	Period
animated promo video about ESSENCE master programs).		Industry		
Information sessions Information sessions are held to inform project's stakeholders about the project details and to recruit students for modernized master degree programs. The 1 st session is held for RU and VN partners' staff; 2 nd – for industry representatives at RU and VN partners while 3 rd through 6 th sessions for prospective students.	Department Institutional Local Regional National International	Staff of partner universities, Prospective students; Industry.	RU and VN partners	Autumn-winter 2018-2019 (1 st and 2 nd), March 2019 – July 2021 (3 rd , 4 th , 5 th , 6 th)
Mass media (on-line and printed newspapers and magazines; video, TV etc) Publications are made in different media to disseminate information about the project, its activities and results achieved.	Local Regional National International	Staff of partner universities; Current students; Prospective students; Higher education community; Industry; Wide public	All partners	October 2017 – October 2021
Conferences / workshops / meetings / presentations Diverse events (starting from department meetings up to international conferences) are used to inform about the project as well as to discuss its implementation, results achieved, and further development.	Department Institutional Local Regional National International	Staff of partner universities; Current students; Prospective students; Higher education community; Industry; Wide public	All partners	October 2017 – October 2021
Final dissemination conference Final dissemination conference will be organized to promote project objectives, work and results to broad audience.	Department Institutional Local Regional National International	Staff of partner universities; Prospective students; Higher education community; Industry; Wide public	P6 hosts with all partners taking part	September 2021
Open-door events Open-door events held at RU and VN partners will be used to recruit students for modernized master degree programs	Institutional Local Regional	Prospective students	RU and VN partners	March 2019 - October 2021
Educational fairs Participation in educational fairs held worldwide will be used to recruit students for modernized master degree programs	Regional National International	Prospective students	RU and VN partners	March 2019 - October 2021

Monitoring and evaluation, reporting and responsibilities

Monitoring and evaluation of dissemination and exploitation activities is very important since the impact of these actions contributes to the successful implementation of the project and its sustainability in the future. The overall quality assurance scheme is described in Project Manual (p. 32), details are specified below.

By monitoring and evaluation, the following tools are used:

- Statistics on the usage of the project web-site, project web-pages at partners' web-sites, and social network pages;
- Monitoring of meetings, workshops, training sessions, webinars, mobility actions and other relevant events;
- Dissemination activity report to be delivered every 6 (six) months with all partners making contribution;

To enable the monitoring and evaluation of dissemination and exploitation activities, each ESSENCE partner should

- prepare and perform related activities in accordance with the developed Project results dissemination and exploitation plan (ESSENCE Dissemination and Exploitation Strategy, p. 9) and Dissemination plan (Project Manual, p. 27);
- report related activities at least once per 6 months as part of the project's overall reporting or upon request of P5 and/or coordinator;
- save evidence of related activities performed.

P5 takes the responsibility for coordination of dissemination and exploitation activities of the whole project while the responsibility for implementation is shared among all partners. Each partner is involved in these activities according to the needs and roles in the project guided by Dissemination Plan. Grant Agreement and Partnership Agreement furthermore state partners' obligations related to dissemination and exploitation: I.10.8. Dissemination and exploitation of results; I.10.9. Publicity obligations; I.10.10. Penalties in the case of non-compliance with publicity obligations; II.7. Visibility of union funding.

Table 2. Dissemination and exploitation plan

Project outputs/ outcomes / actions	Purpose	Target groups	Diss. level	Tools and channels	Partners' involvement	Start date	Evidence/ Reporting
Results of survey of stakeholders' expectations on SES master program content and structure	Disseminate	Staff of partner universities; Current students at RU and VN partners; Industry; Higher education community; Wide public	Department Institutional Local National International	Project website; Partners' websites; Social networks; Meetings, information sessions at RU and VN partners; Newsletter	All partners	May 2018	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events; Mailing lists
Assessment visits	Disseminate	Staff of partner universities;	Department Institutional National International	Project website; Partners' websites; Social networks; Meetings at RU and VN partners; Newsletter	All partners	February 2018	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events
Reports on current situation at RU and VN partners	Exploit	Staff of RU and VN partner universities; Industry;	Department Institutional	Meetings, information sessions at RU and VN partners	RU and VN partners	March 2018	Agendas/protocols, participants lists, photos etc from events; Mailing lists
List of selected and assigned courses, list of ILOs	Disseminate	Staff of partner universities;	Department Institutional	Project website; Partners' websites; Social networks; Meetings at RU and VN partners; Newsletter	All partners	April 2018	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events; Mailing lists
Peer-reviewed course syllabi	Exploit	Staff of RU and VN partner universities; Industry; Higher education community; Wide public	Department Institutional Local National International	Project website; Meetings at RU and VN partners; Newsletter; Conferences/ workshops	RU and VN partners	September 2018	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events; Mailing lists; Links/ copies of publications
Peer-reviewed teaching materials	Exploit	Staff of RU and VN partner universities; Current students; Higher education community; Wide public	Department Institutional Local National International	Project website; Partners' websites; Social networks; Meetings at RU and VN partners; Newsletter; Mass media; Conferences/ workshops	All partners	December 2019	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events; Mailing lists; Links/ copies of publications
Established contacts with industrial partners	Disseminate	Staff of partner universities; Current students; Prospective students; Industry	Department Institutional Local National	Project website; Partners' websites; Social networks;	RU and VN partners	December 2020	Links to websites and social networks;
Webinar on advanced	Exploit	Staff at RU and VN partner	Department	Project website;	RU and VN	March 2019	Links to websites and social networks;

Project outputs/ outcomes / actions	Purpose	Target groups	Diss. level	Tools and channels	Partners' involvement	Start date	Evidence/ Reporting
teaching techniques		universities	Institutional	Partners' websites; Social networks; Meetings at RU and VN partners; Newsletter	partners		Mailing lists; Participants' lists and feedback from participants (event at RTU) Agendas/protocols, participants lists, photos etc from multiplication events at RU and VN partners;
Training of RU and VN staff at EU partners	Exploit	Staff at RU and VN partner universities	Department Institutional	Project website; Partners' websites; Social networks; Newsletter	RU and VN partners	April – May 2018	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events; Mailing lists
Webinar on course harmonization	Disseminate , exploit	Staff at RU and VN partner universities	Department Institutional	Project website; Social networks; Meetings at RU and VN partners	RU and VN partners	June 2021	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events;
Pilot implementation of curricula	Disseminate	Staff at RU and VN partner universities; MP students at RU and VN partner universities; Industry	Department Institutional Local National	Project website; Partners' websites; Social networks; Meetings at RU and VN partners; Newsletter	RU and VN partners	September 2019	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events; Mailing lists
Summer school	Disseminate	Students at partner universities; Students of external universities, partners of ESSENCE consortium members; Staff at partner universities; Higher education community; Wide public	Department Institutional National International	Project website; Partners' websites; Social networks; Newsletter; Mass media	All partners	June 2021	Links to websites and social networks; Mailing lists; Links/copies of publications
Results of survey of projects' stakeholders on curriculum implementation quality	Exploit	Staff at partner universities; MP students at RU and VN partner universities; Industry; Higher education community; Wide public	Department Institutional National International	Project website; Partners' websites; Social networks; Meetings at RU and VN partners; Newsletter; Mass media	All partners	July 2021	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events; Mailing lists; Links/copies of publications
Quality assurance visits	Disseminate	Staff at partner universities	Department Institutional	Project website; Partners' websites; Social networks; Meetings at RU and VN partners;	All partners	December 2019	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events;

Project outputs/ outcomes / actions	Purpose	Target groups	Diss. level	Tools and channels	Partners' involvement	Start date	Evidence/ Reporting
Quality assurance plan for the future	Exploit	Staff at partner universities; Higher education community	Department Institutional International	Project website; Partners' websites; Social networks; Meetings at RU and VN partners; Newsletter	RU and VN partners	September 2021	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events; Mailing lists
Signed agreements on academic mobility	Disseminate	Staff at partner universities; MP students at partner universities; Industry; Higher education community; Wide public	Department Institutional Local National International	Project website; Partners' websites; Social networks; Meetings at partner universities; Newsletter; Mass media;	All partners	2019	Links to websites and social networks; Agendas/protocols, participants lists, photos etc from events; Mailing lists; Links/ copies of publications
Coordination meetings	Disseminate	Staff at partner universities	Department Institutional	Project website; Partners' websites; Social networks; Newsletter	All partners	February 2018	Links to websites and social networks; Mailing lists;

Project booklet

Establishing Smart Energy System Curriculum at Russian and Vietnamese Universities (ESSENCE) is a curriculum development project initiated by universities from European Union, Russia and Vietnam funded by the Erasmus+ Programme of the European Union, Key Action 2, Capacity Building in Higher Education

ESSENCE consortium consists of 10 higher educational institutions from Latvia, France, Slovakia, Russia and Vietnam and an associated partner all having solid academic and research background, established connections with industry, strong motivation to share the best practices and adopt them.

CONSORTIUM

- Riga Technical University (RTU)**
Riga, Latvia
- Grenoble Institute of Technology Grenoble (INPG),**
Grenoble, France
- Technical University of Kosice (TUKO)**
Kosice, Slovakia
- Tomsk Polytechnic University (TPU)**
Tomsk, Russia
- Irkutsk National Research Technical University (INRTU),**
Irkutsk, Russia
- Ural Federal University (UrFU)**
Ekaterinburg, Russia
- Kazan State Power Engineering University (KSPU),**
Kazan, Russia
- North-Eastern Federal University (NEFU)**
Yakutsk, Russia
- Ho Chi Minh City University of Technology and Education (HCMUTE),**
Ho Chi Minh, Vietnam
- Hanoi University of Mining and Geology (HUMG),**
Hanoi, Vietnam

Associated partner,
Moscow, Russia

Main objective of ESSENCE project is to modernise and implement master level curriculum in smart energy systems at Russian and Vietnamese universities in a way to meet the requirements and expectations of main stakeholders of the programme, in accordance with Bologna requirements and European Qualification Framework and in close cooperation with industry. Programme graduates possessing extended knowledge and skills in the following fields will satisfy the needs of Russian and Vietnamese energy sectors in engineers of new format.

The project will benefit multiple target groups on different levels during the project life-time and beyond: current and prospective students, staff of participating universities, higher educational society and industry.

PROJECT COORDINATOR

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 info@essence-erasmus.org

PROJECT GOALS

- ☑ To boost internationalisation processes at Russian and Vietnamese universities through intensifying international and national level cooperation between participating universities
- ☑ To create necessary similarities enabling academic mobility between participating universities and smooth recognition of study results obtained
- ☑ To enhance professional competence of partner countries universities teachers and enhance networking amongst the participating universities
- ☑ To enhance collaboration with industrial enterprises as main stakeholders for their involvement into educational process
- ☑ To enhance the employability of university graduates

PROJECT RESULTS

- ☑ Modernised degree programmes will be implemented at RU and VN universities, peer-reviewed teaching and learning materials including guide on industry involvement in 3 languages (EN, RU and VN) will be developed and uploaded to project web-site for free use.
- ☑ Partner university teachers, representatives of RU and VN HEIs will be trained in advanced teaching methodologies.
- ☑ Partner university teachers will enhance their skills in curriculum development and subject area.
- ☑ Contacts with industrial enterprises in RU and VN will be established for their deeper involvement into educational process and enhanced job placement of programme graduates.
- ☑ Agreements on academic mobility between CM will be signed.

Establishing Smart Energy System Curriculum at Russian and Vietnamese Universities

Co-funded by the Erasmus+ Programme of the European Union

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(Ural Federal University)

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PROJECT TIMELINE

- 2017
 - Project launch
 - Needs analysis and assessment visits
 - Core curriculum approval
- 2018
 - Staff training
 - Syllabi development and peer-review
 - Teaching material development and review
 - Laboratory modernisation
- 2019
 - Piloting of courses and modernised programs
 - QA visits
 - Summer school ESSENCE
- 2020
 - Launch of modernised master programs
 - Final conference

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Establishing Smart Energy System Curriculum at Russian and Vietnamese Universities

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Co-funded by the Erasmus+ Programme of the European Union



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-  Riga Technical University (RTU) Riga, Latvia
-  Grenoble Institute of Technology Grenoble (INPQ), Grenoble, France
-  Technical University of Kosice (TUKE), Kosice, Slovakia
-  Tomsk Polytechnic University (TPU), Tomsk, Russia
-  Irkutsk National Research Technical University (NNTU), Irkutsk, Russia
-  Ural Federal University (Urfu), Ekaterinburg, Russia
-  Kazan State Power Engineering University (KSPBU), Kazan, Russia
-  North-Eastern Federal University (NEFU), Yakutsk, Russia
-  Ho Chi Minh City University of Technology and Education (HCMUTE), Ho Chi Minh, Vietnam
-  Hanoi University of Mining and Geology (HUMIG), Hanoi, Vietnam
-  OOO Siemens Makina Associated partner, Moscow, Russia



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- Agreements on academic mobility between QM will be signed

PROJECT COORDINATOR

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Russian universities 3
European universities 10
Vietnamese universities 2

5103

UNIVERSITIES

5...7...10

COUNTRIES

LABORATORIES

DISCIPLINES



Project poster

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The project will benefit multiple target groups on different levels during the project life-time and beyond: current and prospective students, staff of participating universities, higher educational society and industry.



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10³ European universities
5² Vietnamese universities
5 Russian universities

UNIVERSITIES

5 COUNTRIES ... **7** LABORATORIES ... **10** DISCIPLINES

PROJECT GOALS

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CONSORTIUM

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-  **Associated partner, Siemens Moscow**, Moscow, Russia

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Project title screens



Program flyer



Establishing Smart Energy System Curriculum
at Russian and Vietnamese Universities



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of the European Union

PROGRAM NAME

PROGRAM CORE CURRICULUM

<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Technologies of Energy Conversion</p> <p>New technologies of energy production, storage, transmission, distribution and consumption in Smart Energy Systems</p> </div> <div style="width: 45%;">  <p>AI and Machine Learning</p> <p>The application of artificial intelligence and machine learning technologies in Smart Energy Systems</p> </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Micro Grid, Smart Grid and Supergrids</p> <p>Different concepts of the grids architecture used to solve the main task of smart power system operation</p> </div> <div style="width: 45%;">  <p>Economics for Smart Energy Systems</p> <p>Consideration of economic processes of electricity markets and challenges in conditions of transition to a market economy</p> </div> </div>
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Digital Technologies for Protection</p> <p>Basic knowledge about Digital Technologies for protection and communication in up-to-date Smart Energy Systems</p> </div> <div style="width: 45%;">  <p>Optimisation in Smart Energy Systems</p> <p>Provides students with advanced mathematical modeling of Smart Energy Systems components and optimization approaches</p> </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Energy Management System</p> <p>Provides students with knowledge on application of SCADA/EMS to monitor instability limits and state estimation</p> </div> <div style="width: 45%;">  <p>ICT for Smart Energy Systems</p> <p>The application of information and communication technologies and computer engineering in Smart Energy Systems</p> </div> </div>
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Power System Analysis</p> <p>Power system analysis, operation modes, including power flows, faults, state and dynamic stability</p> </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Practical training</p> <p>The application of academic skills to professional activities to gain practical experience</p> </div> </div>

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PROJECT GOALS

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- To enhance the employability of university graduates

PROJECT RESULTS

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- Agreements on academic mobility between CIM will be signed

Stanislav Eroshenko

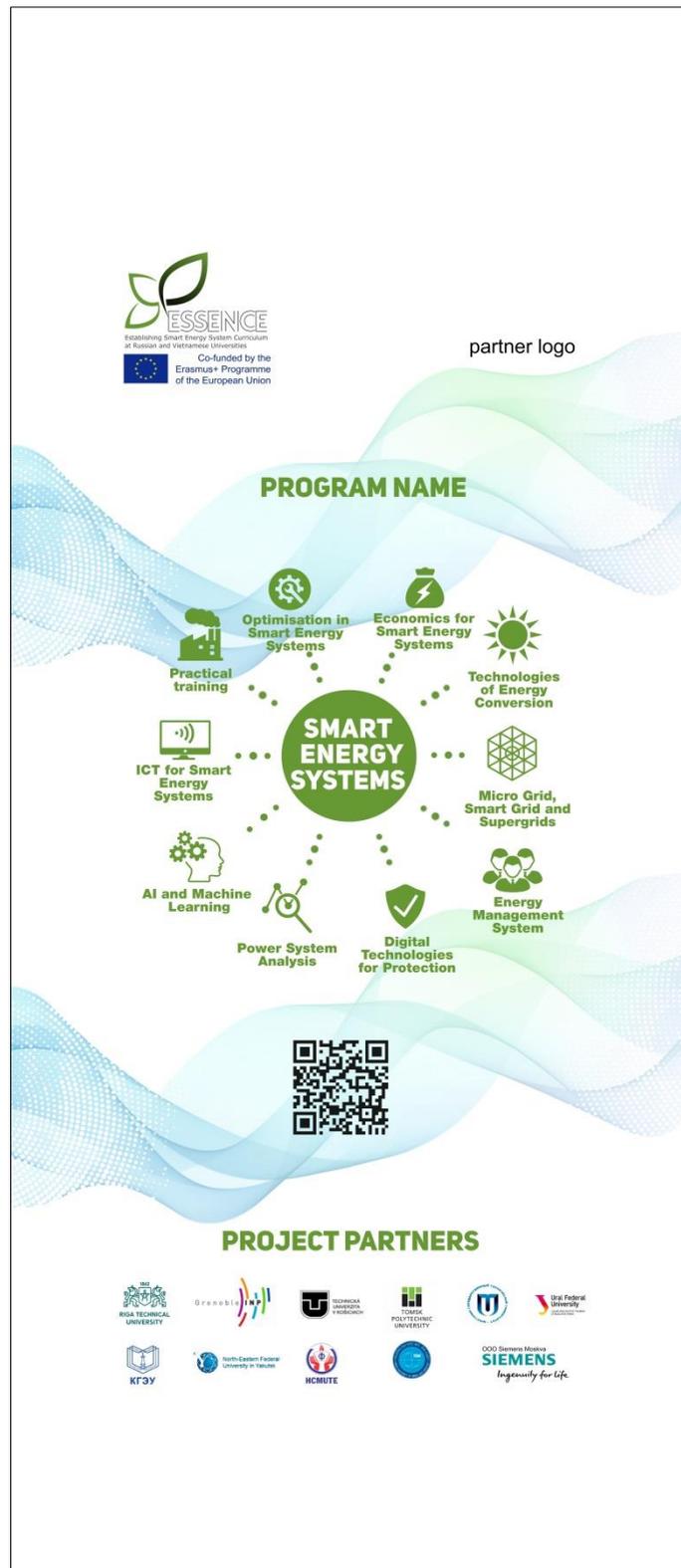
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Program rollup





Establishing smart energy system curriculum at Russian and Vietnamese universities (ESSENCE)
586087-EPP-1-2017-1-LV-EPPKA2-CBHE-JP (2017-3017/001-001)

NEWSLETTER

Issue # 1 / October 2017 – March 2018 /

IN THIS ISSUE

- Project in brief
- Kick-off meeting
- Self-examination of RU and VN universities
- Assessment visits of EU partners
- Survey of project stakeholders
- Upcoming events

PROJECT IN BRIEF

The project **Establishing smart energy system curriculum at Russian and Vietnamese universities** (ESSENCE) was supported by the European Union within the framework of the programme *Erasmus+, Key Action 2, Capacity-building projects in the field of higher education*. Project period is from **October 15, 2017 till October 14, 2020**. The amount of EU funding is **856 328 EUR**.

The **main objective** of the project is to modernise master level curriculum in smart energy systems (SES) at Russian and Vietnamese partners in close cooperation with industry, in accordance with Bologna and European Qualification Framework requirements in order to meet the expectations of main stakeholders.

Project **specific objectives** are as follows:

to modernise and implement master level courses based on the specific assets of participating partners in accordance with EQF and industry expectations;

to boost internationalisation processes at RU and VN universities through intensifying international and national level cooperation between participating universities;

to create necessary similarities enabling academic mobility between participating universities and smooth recognition of study results obtained;

to enhance professional competence of partner countries universities teachers and enhance networking amongst the participating universities

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to enhance collaboration with industrial enterprises as main stakeholders for their involvement into educational process;

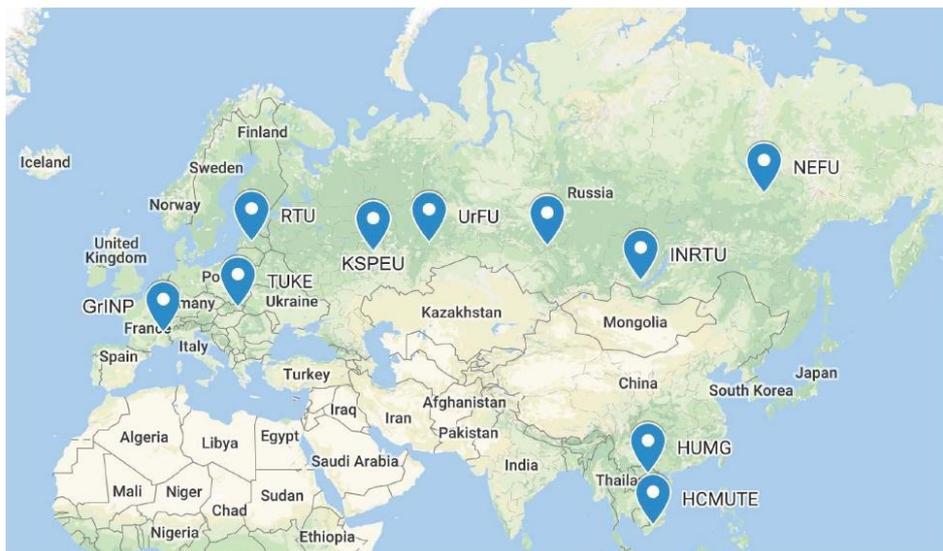
to enhance the employability of university graduates.

The project will benefit multiple target groups on different levels during the project life-time and beyond: current and prospective students, staff of participating universities, higher educational society, and industry.

The project consortium is composed of 10 partners from the European Union, Vietnam and Russia as well as one associated partner.

Coordinator: Riga Technical University (RTU),

Latvia; **Partners:** Institut Polytechnique de Grenoble (Grenoble INP), France; Technical University of Košice (TUKE), Slovakia; Tomsk Polytechnic University (TPU), Russia; Irkutsk National Research Technical University (INRTU), Russia; Ural Federal University (UrFU), Russia; Kazan State Power Engineering University (KSPEU), Russia; North-Eastern Federal University (NEFU), Russia; Ho Chi Minh City University of Technology and Education (HCMUTE), Vietnam; Hanoi University of Mining and Geology (HUMG), Vietnam; **Associated partner:** Siemens Moscow.



**TECHNICKÁ UNIVERZITA
V KOŠICIACH**



RIGA TECHNICAL
UNIVERSITY



Grenoble
INP



TOMSK
POLYTECHNIC
UNIVERSITY



КГЭУ
50 ЛЕТ ДВИЖЕНИЯ
ВПЕРЕД



IRKUTSK NATIONAL
RESEARCH
TECHNICAL
UNIVERSITY



North-Eastern Federal
University in Yakutsk



Ural Federal
University



HCMUTE

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KICK-OFF MEETING

The kick-off meeting for ESSENCE project took place in February 15-16, 2018 in Kazan, Russia. The first face-to-face meeting of consortium members was hosted by Kazan State Power Engineering University. The two-day agenda of the meeting was very rich:

introduction of partner universities and project teams; detailed presentation of work packages by their leaders; discussion of current and forthcoming project activities and tasks.



SELF-EXAMINATION OF RU AND VN UNIVERSITIES ASSESSMENT VISITS OF EU PARTNERS

Within the framework of the Preparation work package with the aim to evaluate the teaching and learning environment at Russian and Vietnamese universities, self-examination of universities in partner countries was carried out followed by assessment visits of representatives from European partners. So, RTU experts have visited TPU and INRTU in Russia, Grenoble INP professor assessed HCMUTE and HUMG in Vietnam while TUKE

team almost crossed Russia from west to east exploring KSPEU, UrFU and NEFU. Based on two reports – on self-examination and assessment one – the final reports on current situation at Russian and Vietnamese partners were produced which will be used for more efficient project realization and project results implementation. It is also to mention that during assessment visits EU experts have contributed a lot to dissemination activities

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through delivering open presentations and lectures, meeting with RU and VN universities administrative and teaching staff and students.



SURVEY OF PROJECT STAKEHOLDERS

With the main aim of ESSENCE project to modernize master level curriculum in the field of smart energy systems (SES), it is crucial to know what to teach to train specialists meeting European requirements. To know the content, the main stakeholders of SES modernised curriculum have been surveyed regarding their expectations and requirements. Grenoble INP with all partners having made input has developed the

questionnaires for students, academics and industry representatives. The questionnaires were available in three languages: English, Russian and Vietnamese. All in all over 1500 persons took part in the survey in Russia and Vietnam: 1143 students, 154 academics, 377 industry representatives. The analysis of questionnaires enabled the production of the extended list of courses for the future core curriculum.

UPCOMING EVENTS

- 🌿 Workshop and partner meeting in Grenoble in April 4-6, 2018
- 🌿 Intensive training of RU and VN staff at EU partners in April - May 2018
- 🌿 Webinar in advanced teaching techniques
- 🌿 Information sessions at RU and VN partner universities in September - October 2018

For further information about the project please refer to web-site www.essence-erasmus.org!

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NEWSLETTER

Issue # 2 / April 2018 – September 2018 /

IN THIS ISSUE

-  ESSENCE project presented to the ambassadors of 18 EU countries
-  News smart energy courses are now defined
-  RU and VN staff learned EU educational policies
-  Ad hoc partner meeting at P4/TPU
-  ESSENCE project presented at the international conference at P7/KSPEU
-  Syllabi of smart energy courses will be soon available online
-  Upcoming events

ESSENCE project presented to the ambassadors of 18 EU countries

The presentation took place at the roundtable devoted to the role of universities in the national economy held in Tomsk 8th October. At the roundtable Tomsk Oblast Governor Sergey Zhvachkin and representatives of Tomsk universities presented European ambassadors their experience and best practices in international scientific cooperation. The meeting was part of a large-scale visit to the Tomsk Oblast by the EU delegation headed by Markus Ederer, Ambassador of the European Union to the Russian Federation.

Totally, the representatives of 18 EU embassies visited the region and the meeting. The project *ESSENCE* was introduced among other examples of successful cooperation between Russia and EU.



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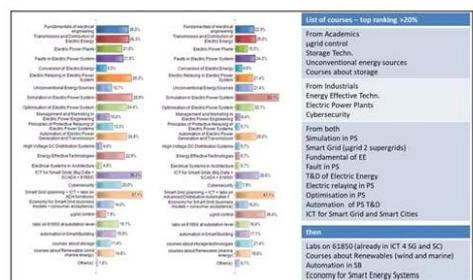


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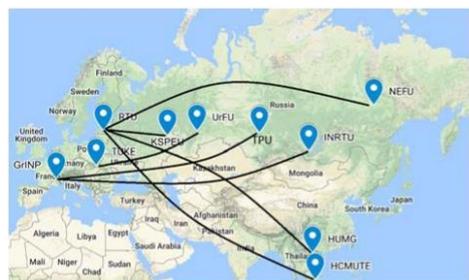
New smart energy courses are now defined

In April 4-6, 2018 Grenoble Institute of Technology (P2) hosted ESSENCE project workshop on selection and assignment of courses and the partner meeting. The meeting has become one of the key events of the project when through vivid and fruitful discussion partners outlined program learning outcomes and those 10 courses which form the core curriculum of the master program. Then, they distributed courses for development, peer-review and supervision based on partners' expertise and free will. The main workshop output has become the list of selected and assigned courses. The meeting agenda also included the partner

coordination meeting where project coordinator and work package leaders gave detailed update on project implementation including first results, upcoming events and deadlines, changes and challenges.



RU and VN staff learned EU educational policies



In April-May 2018 representatives of Russian and Vietnamese consortium members took part in seminars organized by EU partners: P4/TPU and P5/INRTU staff visited P2/Grenoble INP, P6/UrFU representatives stayed at P3/TUKE while colleagues from

P7/KSPEU, P8/NEFU, P9/HCMUTE, and P10/HUMG visited P1/RTU. The main goal of the events was to enhance the expertise of participating staff in the area of curriculum development through lectures, presentations, discussions, and trainings as well as to improve their professional knowledge and skills via visits to laboratories, libraries, classes, and study of methodological documentations. The main outcome of the seminars has become the 2nd draft of syllabi developed by academic staff of Russian and Vietnamese partners under the supervision of EU experts.

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Ad hoc partner meeting at P4/TPU

In September 12-14, 2018 Tomsk Polytechnic University (P4) has hosted the ad hoc ESSENCE partner meeting on syllabi and teaching material development. The goal of the meeting was to discuss the project progress, highlight risks/issues and devise ways to overcome them. Participants from nine partners P1/RTU, P3/TUKE, P4/TPU, P5/INRTU, P6/UrFU, P7/KSPEU, P8/NEFU, P9/HCMUTE and P10/HUMG actively collaborated to finalize syllabi description and overall core structure of SES curricula, to harmonize ILOs and PLOs, to elaborate final equipment/software/book lists, to develop teaching materials process. The reports provoked much debate and strong interest among the audience. Along with formal

meetings and sessions, all participants had a chance to enjoy lively discussions during numerous networking activities and social events. The participants visited labs housed by the School of Energy and Power engineering, Museum of TPU history and the University exhibition hall.



ESSENCE project presented at the international conference at P7/KSPEU



Russian partners of ESSENCE consortium – P4/TPU, P5/INRTU, P6/UrFU, P7/KSPEU, P8/NEFU – have presented ESSENCE project at the international conference “Electric power

industry in the eyes of youth” hosted by Kazan State Power Engineering University (P7) in October 1-5, 2018. Key information about ESSENCE project –project goals and objectives, consortium members, first activities performed and results achieved – was reported at the meeting of the methodological council on engineering education development. The council meeting participants have become experts and scientists in the field of power engineering from Russian leading companies and universities. The presentation provoked strong interest among the audience.

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Syllabi of smart energy courses will be soon available online

Russian and Vietnamese partners have finished the development of course syllabi under the guidance of P4/TPU. In the beginning of November 2018 the materials will be available on ESSENCE project web-site. The development process lasted several months and turned out to be a multistage and challenging task. The first drafts of syllabi were produced prior the training seminars at EU partners took place in April and May 2018. The drafts were processed and revised by Russian and Vietnamese staff during their stay in Riga, Grenoble and Kosice under the supervision of EU experts. The second drafts of syllabi appeared and were sent for peer-review. By the end of June peer-reviewed syllabi for 10 courses were available, and the process started to harmonize and finalize

intended learning outcomes, course sequence, equipment list, to eliminate overlaps between the courses etc. Due to differences between European, Russian and Vietnamese educational systems and standards, teaching and learning approaches, cultural differences, the harmonization process turned out to be quite long, full of online and face-to face discussions and requiring multiple iterations but still necessary to develop the well harmonized core curriculum of the master program. Due to the need of face-to-face dialogue additional meeting has been organized in Tomsk in September 2018. This allowed to move things forward and facilitate the process.

Upcoming events

- 🌿 Webinar in advanced teaching techniques
- 🌿 Information sessions at RU and VN partner universities in September - October 2018
- 🌿 Development and peer-review of teaching materials
- 🌿 EACEA monitoring visit to P4/TPU
- 🌿 Partner meeting at P1/RTU

For further information about the project please refer to web-site www.essence-erasmus.org!

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NEWSLETTER

Issue # 3 / October 2018 – March 2019 /

IN THIS ISSUE

-  Over 600 people reached via information sessions at RU and VN partner universities
-  Syllabi of SES curriculum available for wider public
-  Cross coaching between Erasmus+ projects at P1/RTU
-  P3/TUKE presents ESSENCE at professional seminar
-  EACEA field monitoring visit results
-  P4/TPU welcomes ESSENCE associated partner SIEMENS
-  Partner meeting and seminar on advanced teaching techniques at P1/RTU
-  Upcoming events

Over 600 people reached via information sessions at RU and VN partner universities

In the period from October 2018 till February 2019 Russian and Vietnamese partners of ESSENCE consortium have organized 16 information sessions for administrative and academic staff as well as representatives of industrial partners with over 600 participants. Each partner has chosen the best way to organize the events to reach out to the maximum number of target audience: on-site sessions, guest presentations, as a part of larger events etc. Inter alia, ESSENCE project was presented at such large-scale events as

Vietnam Symposium on Advances in Offshore Engineering (VSOE) and International Forum "Russian Grids".



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Syllabi of SES curriculum available for wider public

Russian and Vietnamese partners have finished the development of course syllabi under the guidance of P4/TPU. From November 2018, materials are [available on ESSENCE web-site](#) for free download and use.

Cross coaching between Erasmus+ projects at P1/RTU

Riga Technical University (P1) presented the ESSENCE project to the participants of another Erasmus+ CBHE project “Development of master curricula for Electrical Energy Markets and Engineering Education” (ELEMEND) during the workshop on novel ICT learning techniques, which was held from 12th to 14th of November 2018 in Riga, Latvia. The main emphasis was laid on the project results achieved, the experience gained and the lessons learnt so far. There was an opportunity to discuss particular

questions regarding quality assurance and practice-oriented teaching techniques individually.



P3/TUKE presents ESSENCE at professional seminar



TUKE presented the project ESSENCE at professional seminar “Current Problems of Electricity in the Slovak Republic” held under

the auspices Ing. Miroslav Biroš, Chief Executive Officer of BBF ELEKTRO, s.r.o. on the occasion of the 45th anniversary of FEI TUKE Department of Power Engineering in Poráč PARK on November 8-9, 2018. Specialists from the energy sector had a lot of interest and questions to implementation of the proposed SES courses since their portfolio is also intended to Smart Metering and Control Systems. They are waiting for the results of this project and further steps in the next seminar.

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EACEA field monitoring visit results

On November 08, 2018 Ms. Anna Muraveva, Deputy Director of National Erasmus+ Office (NEO) Russia and Ms. Julia Redina, NEO staff, visited Tomsk Polytechnic University (P4) with a preventive monitoring of ESSENCE project. The visit was preceded with intense and well-coordinated work of the consortium members to provide updated information on the progress that is being made towards the achievement of the project objectives. Along with the host party - P4

project team - representatives of Ural Federal University (P6) took part in the meeting. ESSENCE coordinator - P1 - participated in the event via Skype. The overall conclusions of the meeting were very positive, NEO experts were glad to notice that in spite of delayed start the project has well advanced. A number of recommendations to improve the project flow and realization have been made and already taken into account by the consortium.

P4/TPU welcomes ESSENCE associate partner SIEMENS

March 28-29, 2019 Tomsk Polytechnic University (P4) was visited by the representative of ESSENCE associated partner – Vice President and Head of Corporate Technologies SIEMENS in Russia Martin Gitsels. During the visit Prof. Gitsels delivered public lecture “The Challenge of Industrial Digitalization” and discussed cooperation opportunities with TPU in the fields of research and education. The lecture was focused on the key aspects of industrial digitalization, incl. digital energy. A special emphasis was put on such technologies as cloud operating systems for the Internet of Things, Machine learning, advanced modelling and simulation, and many others. Besides, Siemens is one of the global leaders in implementation of digital substation projects, building HDVC and FACTS systems, wind and gas turbine plants, which are the core components of Micro grid, Smart grid and Super grid around the world.

The ESSENCE project results, ongoing and upcoming activities and research cooperation with TPU have also been discussed with Prof. Gitsels. The results of this discussion proved that the defined list and content of the courses follow up the industry expectation. Siemens is a global expert in the subject of most of the courses included into ESSENCE core curriculum and is ready to advise and provide the opportunities for the students to use their product for teaching and learning.



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Partner meeting and seminar on advanced teaching techniques at P1/RTU



On March 18-20, 2019 Riga Technical University (P1) has hosted the ESSENCE partner meeting and the Training on the Advanced Teaching Techniques. During the partner meeting the project progress has been discussed highlighting the most important on-going and up-coming activities. The partners are actively contributing to complete the mid-term report and to improve the quality assurance of the project implementation. The training on the advanced teaching techniques is prepared by TUKE/P3.

The aim of the training is to present the advanced teaching techniques specially selected for the core curricula on Smart Energy System such as Gamification, eduScrum, Brainstorming, e-Learning, Project-based learning.

Along with the formal meetings and sessions, all participants had a chance to enjoy lively discussions during numerous networking activities and social events, including the visit to the RTU design factory.



Upcoming events

-  Information sessions for students at RU and VN partner universities
-  Finalizing and peer-review of teaching materials
-  Purchase and installation of equipment for SES curricula implementation
-  Pilot implementation of SES core courses and curricula at RU and VN partner universities

For further information about the project please refer to web-site www.essence-erasmus.org!

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NEWSLETTER

Issue # 4 / April 2019 – October 2019 /

IN THIS ISSUE

-  Ready, steady, go! SES curricula launched
-  Headhunting completed successfully
-  Beneficial pre-piloting
-  ESSENCE creates spin-offs
-  Becoming more recognizable
-  Keep updated
-  The mid-point passed
-  Upcoming events

Ready, steady, go! SES curricula launched

In the fall semester of 2019/2020 academic year, Russian and Vietnamese partners of ESSENCE consortium started the piloting of SES curricula and courses. While some partners are piloting one or two developed courses under existing master programs three Russian partners have launched new programs encompassing all 10 disciplines developed under the project:

- **P5/INRTU** launched a new master program "Digital power engineering" and enrolled 15 students;
- **P6/UrFU** opened the program "Design and operation of power engineering systems" with 6 students enrolled;
- **P7/KSPEU** launched a new master program "Smart energy systems" and recruited 6 students.

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Headhunting completed successfully

To recruit students for new master programs, Russian partners P5/INRTU, P6/UrFU and P7/KSPEU organized targeted information sessions as well as used tools and channels provided under regular recruitment campaigns at universities such as webinars, promo videos, off-campus presentations, open-doors etc. Main target group of the events became bachelor students of their last year majoring in power engineering and related specialties. [More information >>](#)



Beneficial pre-piloting



The course "Artificial intelligence and machine learning" developed by P6/UrFU was for the first time implemented for foreign students within the framework of Summer University 2019 held at P6. Under the Ideathon - one of the University's activities - within the track "Energy" students from India and France were looking for the solution of technical state assessment problem of high-voltage power transformers using machine learning approaches. [More information >>](#)

ESSENCE creates spinoffs

At the end of October 2019, the delegation of P6/UrFU visited 5 large universities in India. Deputy Vice-Rector for Academic Affairs and Director of the Department of International Educational Programs at UrFU presented Summer University 2020 "Machine Learning and AI in the Renewable Energy Sector" and short-term training programs including "Machine Learning in Power Industry" to Indian colleagues and students. Both projects



are the spin-offs of ESSENCE and delivered by project team members, developers Aleksandra Khalyasmaa and Stanislav Eroshenko.

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Becoming more recognizable



To attract more attention to the project and recruit students for the new programs different types of promotional materials have been designed.

Keep updated

P1 / Riga Technical University

On October 8, 2019 WP5 leader Anastasia Ziravecka presented the project at RTU International Conference **RTUCON'19**, section of education in engineering, with the information of basic approach and aspects of quality assurance and control of developed courses and programs implementation. The presentation was in the focus of attention and became an excellent opportunity to discuss quality assurance challenges and share good practices.

At the end of October the challenges in the field of energy, including ESSENCE project and its main goals, were presented by P1 representative Laila Zemite during the award event of the winners of **Latvian Association of Power Engineers and Energy Constructors**. The aim of the competition is to reward the best closing work in the field of energy and electrical engineering by promoting the quality of work and cooperation of industry with universities and students. Under the awards event, presentations of industry and academia representatives were held



drawing the winners' attention to future challenges and the importance of their sector.

P3 / Technical University of Kosice

P3 presented ESSENCE project during the teacher mobility visit to the **University of VŠB TU Ostrava (Czech Republic)** in May 2019. One of the topics concerned the realized and ongoing projects at individual universities and departments. A very good response was given to the lecture about ESSENCE. [More information >>](#)

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Russian partners of the consortium

P4/TPU, P5/INRTU, P6/UrFU, and P7/KSPEU presented ESSENCE project results at the 10th-anniversary **international conference “Electric power industry in the eyes of youth-2019”**. [More information >>](#)

P5 / Irkutsk National Research Technical University

Academic supervisor of the project at P5 Konstantin Suslov has become an invited speaker at the **international conference “Innovative Smart Grid Technologies Europe (ISGT Europe)”** and shared experience on ESSENCE project realization. [More information >>](#)

P6 / Ural Federal University

The prospects of realization of SES curriculum were highly appreciated by the participants of the meeting of the **Union of Industrialists and Entrepreneurs of Sverdlovsk Region**. [More information >>](#)

The prospects of realization of SES curriculum developed under ESSENCE project were highly appreciated by the participants of the meeting of the **Union of Industrialists and Entrepreneurs of Sverdlovsk Region**. [More information >>](#)

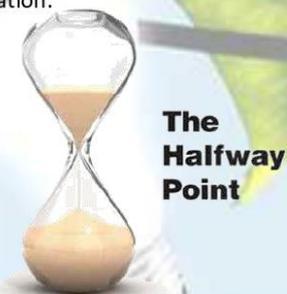
P9 / Ho Chi Minh City University of Technology and Education

In October 2019 P9 introduced ESSENCE project to the staff of the **Solar farm of the Pacifico Company** located in Ninh Thuan Province (Vietnam). The company was visited by P9 representatives with the aim to exchange expertise between the University teachers/researchers and the management and engineers of the plant for up-to-date technology applications and solutions. ESSENCE project was evaluated by the host company as a very promising and on-time program to prepare for human resources of the field in the very near future.

The mid-point passed

In April 2019 ESSENCE team submitted a mid-term report covering 1-18 months of the project implementation to EACEA for evaluation. After a thorough examination of the report and results of field monitoring visits, EACEA approved the report and qualified the project implementation as GOOD. The EACEA spotted that the project fully complies with the national strategy for the Energy sector of Russia and Vietnam as well as they positively noted that industry-oriented and student-centered properties of curricula and separate courses are well tracked through the project lifecycle. Experts

also noted that the project website has a professional layout, well-structured and provides good coverage of the project progress. Besides, the project received valuable recommendations on how to improve its implementation.



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Upcoming events

-  Familiarizing with the new lab equipment
-  Harmonizing SES curricula and teaching materials
-  QA visit of EU consortium members to RU and VN partner universities
-  Project management team meeting at P4/TPU
-  RU/VN teachers mobility
-  Project partner meeting at P9/HCMUTE

For more information



Scan me

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NEWSLETTER

Issue # 5. Special coronavirus focus: challenge or opportunity?

Nearly every person and every aspect of our life has been affected by the COVID-19 pandemic. Businesses of all different sizes and industries of all different sorts have been substantially impacted. And the higher education sector has not become an exception. Coronavirus effects on universities are multifaceted and quite complex. Whether it concerns recruitment, admission, learning, or teaching, COVID-19 is making a significant and more likely lasting impression on HEIs all over the world. And those universities that adapted and innovated their processes during the hard pandemic times will no doubt come out with stronger technology solutions, more efficient student and staff support systems that will serve them for years to come.

In this issue of the newsletter, we would like to share the experience of ESSENCE partners about how they worked under the coronavirus. **So, in spring 2020 the Universities went online...**

Online!



Moving from physical to virtual space

Educational process at universities was greatly affected by COVID-19. Indeed, within a very short period of time ALL people associated with the higher education – students, teaching and technical staff, administrative personnel – had to adapt to the new online environment.

The three of ESSENCE partners that have launched new/modernized SES master degree programs in fall 2019 (P5/INRTU, P6/UrFU and P7/KSPEU) as well as P10/HUMG that has

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piloted two ESSENCE courses in the spring semester 2019/2020 report that they have successfully overcome the challenges set by the pandemic and organized the teaching and learning process in the online format. The well-coordinated work of all university staff and their dedication made it possible to deliver lectures, organize discussions, and take tests and exams. ESSENCE partners share their experience:



Konstantin Suslov, academic supervisor of ESSENCE project at P5/INRTU, master program supervisor: “The almost immediate turn to online format has become a big challenge to both our teachers and students. We worked very hard to organize the educational process. The main platform for online teaching and learning became Moodle. We also used ZOOM and Tencent Meeting platforms as well as other communication tools such as e-mail, WhatsApp, phone. Depending on the course, the assessment was organized in the form of interviewing or testing. The major problem we faced but couldn’t solve at least at that moment of time is related to laboratory works. The labs required the physical presence of students and staff and couldn’t be performed virtually using specialized software. Therefore we postponed laboratory works for the next semester. But we accepted the challenge and are searching for the solution to this problem.

Despite all difficulties, we do appreciate the experience we acquired. We will definitely use the elements of online teaching by standard “offline” delivery of our educational programs.

It should be also mentioned that our University administration and IT services did their best to secure the smooth transition to and realization of online training. E.g. webinars on how to use Moodle as well as other tools for online teaching were organized. IT specialists were available for counselling and support”.



Aleksandra Khalyasmaa, ESSENCE project quality team member, course developer at P6/UrFU: “Under the conditions of COVID-19 pandemic, online platforms have become the key and necessary tools enabling the interaction with students: delivery of lectures, record, and publication of training materials, counselling, assessment, etc. Using technological solutions offered by Moodle, Microsoft Teams, Discord, we succeeded in online training of our students enrolled in the master program “Design and operation of power engineering systems”. The use of such tools as Google Classroom, Zoom, YouTube, and others also allowed us to fill the taught courses with new type of information – more demonstrative – and adapt them for online format. So that online educational process is efficient and successful, we had to ensure that all participants of the educational process had access to online technologies.

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COVID-19 created a lot of challenges. We understood that we have to unit to generate the common educational space through distance learning. We furthermore grasped that education requires new approaches and resources. We have to consider the pandemic as an opportunity to analyze our experience and re-think the existing educational models to adapt them to new conditions and to the new future”.



Nguyen Thi Phuong Thao, administrative coordinator of ESSENCE project at P10/HUMG: “Like numerous other universities in Vietnam, HUMG partly closed and we worked at distance in the period from March to May 2020. Lectures and meetings were carried out by switching to virtual teaching, distance and home learning, home working via digital channels. The university has set up a crisis team that constantly monitors the current developments surrounding the Coronavirus and is in permanent contact and coordination with the national and regional health authorities. In line with this coordination, we have adopted all recommendations made by the Vietnamese government to provide adequate precautionary measures. All HUMG students and staff have been instructed by email to follow the national guidelines and informed on the hygiene measures to adopt. We keep them updated as more information comes in and make every effort to ensure that students are not disadvantaged by the current situation.

As far as the piloting of ESSENCE courses is concerned, in spring semester 2019/2020 two disciplines were delivered to 7 students of the master program of electrical engineering: power system analysis and optimization for SES. We used Microsoft Teams to conduct online teaching, the University provided Microsoft account to all staff and students. Students could communicate personally and directly with their teachers via email and by Zalo as well (Zalo is an application developed by Vietnamese technicians, and popularly used in Vietnam). By lab works realization, we used blended teaching and learning mode. Students were assigned to perform an experimental project that allowed them to use free trial software at home and attend classes scheduled in the computer lab. That helped to reduce the face-to-face time, which should be limited in the pandemic period. The assessment was organized with traditional placed-based mode”.

Student recruitment and enrollment go online

Along with the problem of moving the educational process online, the universities worldwide – including ESSENCE partners – have also faced the challenge of recruiting new students in the midst of the global pandemic. We surveyed P5/INRTU, P6/UrFU, and P7/KSPEU who have been recruiting students for ESSENCE master programs about the measures taken to ensure the enrollment of new students as well as peculiarities of the admission campaign 2020.

This project has been funded with support from the European Commission. This publication / communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein



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This spring, the HEIs canceled all traditional on-campus recruitment events such as open-door, educational fairs, visits to schools, meetings, etc. It became clear that the only way to reach prospective students – both national and international – is using digital tools and channels such as social network groups (vKontakte, Facebook, Instagram), webinars, messengers (WhatsApp, Viber), mailing lists. Promotional videos on TV, banners and billboards, advertisements on radio have been also used more extensively than in the past years. The application deadlines at Russian universities have also been extended. The efforts made proved to be efficient since notwithstanding the restrictions imposed by the coronavirus, the number of enrolled students didn't decrease compared to the previous year: INRTU enrolled 15 students to its master program "Digital power engineering", UrFU – 6 students for the program "Design and operation of power engineering systems" while KSPEU admitted 6 students for the English-taught master program "Smart energy systems".

The admission process 2020 has also undergone considerable changes, i.e. everything moved online. Applications were made through the online application system; all the required application documents were uploaded to the personal account. There was no need for prospective students to come to universities in person. Depending on the partner, students had 1 or 2 entrance examinations which were also taken online in the form of an interview or a test: applicants at each of three partners were interviewed/tested in professional knowledge (power engineering) while UrFU prospective students also took an exam in IT and KSPEU applicants in English.

P7/KSPEU mentioned a positive aspect of moving the admission online: the geography of prospective students expanded. Graduates from HEIs in Moscow, Ekaterinburg, Kyzyl, Ufa, Chelyabinsk, Ivanovo, Izhevsk, Yoshkar-Ola, and other Russian cities applied for the program while the most applicants of the last year were the graduates of Kazan universities.

COVID-19 closes borders but opens up opportunities

Ural Federal University (P6/UrFU) has successfully implemented **online international internship** on the basis of ESSENCE project. Six students of the French university ENSEA completed an online internship at UrFU organized by the Department of International Educational Programs together with Ural Power Engineering Institute and Institute of Natural Sciences and Mathematics. The SVEL Company Group, one of the leading Russian manufacturers of electrical equipment, has become the partner company.



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SVEL set the project task “Power Transformer Technical State Assessment.” Each participant presented his/her own version and an algorithm for solving it. The expert committee identified two finalists for the internship – Josef Salah and Tusan Thalayasingam. Students have received an opportunity to publish research results in a journal indexed in Scopus and Web of Science. All students received certificates from UrFU and recommendation letters from the SVEL group.

More information at <http://essence-erasmus.org/2020/07/24/urfu-has-established-international-internship-online/>. Watch the promo video: <https://youtu.be/5rDiFFcd81Y>

**VISIONARY LECTURE
SMART POWER INDUSTRY.
REAL EUROPEAN CASES**

20 August, 12.00 (Moscow time)

Speaker: Raphael Caire, DSc

Associate Professor Grenoble INP - Emes5
Task coordinator of the international master in Electrical Engineering
For Smart Grid and Buildings
Senior researcher Grenoble Electrical Engineering Laboratory (G2Elab)
Cohead of SYREL team



On August 20, 2020 a **visionary lecture “Smart Power Industry. Actual projects in Europe”** was held in Zoom within the framework of P6/UrFU international scientific and methodological center lecturing campaign. The speaker was the world-renowned scientist Dr. Raphael Caire in Engineering and Head of the Smart Grids Laboratory at the Grenoble Institute of Technology (P2/Grenoble INP).

“This visionary lecture is a good case of international collaboration that sprang up and is developing within the current project “Establishing smart energy system curriculum at Russian and Vietnamese universities” (ESSENCE). Also, thanks to the collaboration within ESSENCE and despite the pandemic, the Ural Power Energy Institute of UrFU in tandem with Grenoble INP submitted a joint grant proposal from the Russian Science Foundation in 2020, so we can say that interaction within the educational process boosted to scientific cooperation between universities.”- Stanislav Eroshenko says, project manager at the Ural Federal University.

More information at <http://essence-erasmus.org/2020/09/01/visionary-lecture-of-dr-raphael-caire-at-p6-urfu/>. Watch the lecture: <https://youtu.be/Kp88l6KymGw>



Not only teaching and learning activities have been turned on remote mode but even the project monitoring activities. In July 2020 the National Erasmus+ Office in Russia carried out **remote advisory monitoring**. Overall despite the circumstances, the project development and results have been highly evaluated and useful recommendations have been provided to further improvements by the monitors. Certainly, not all the project activities have been and can be performed as planned and not all the partners have easily adapted to the changes. The situation with COVID-

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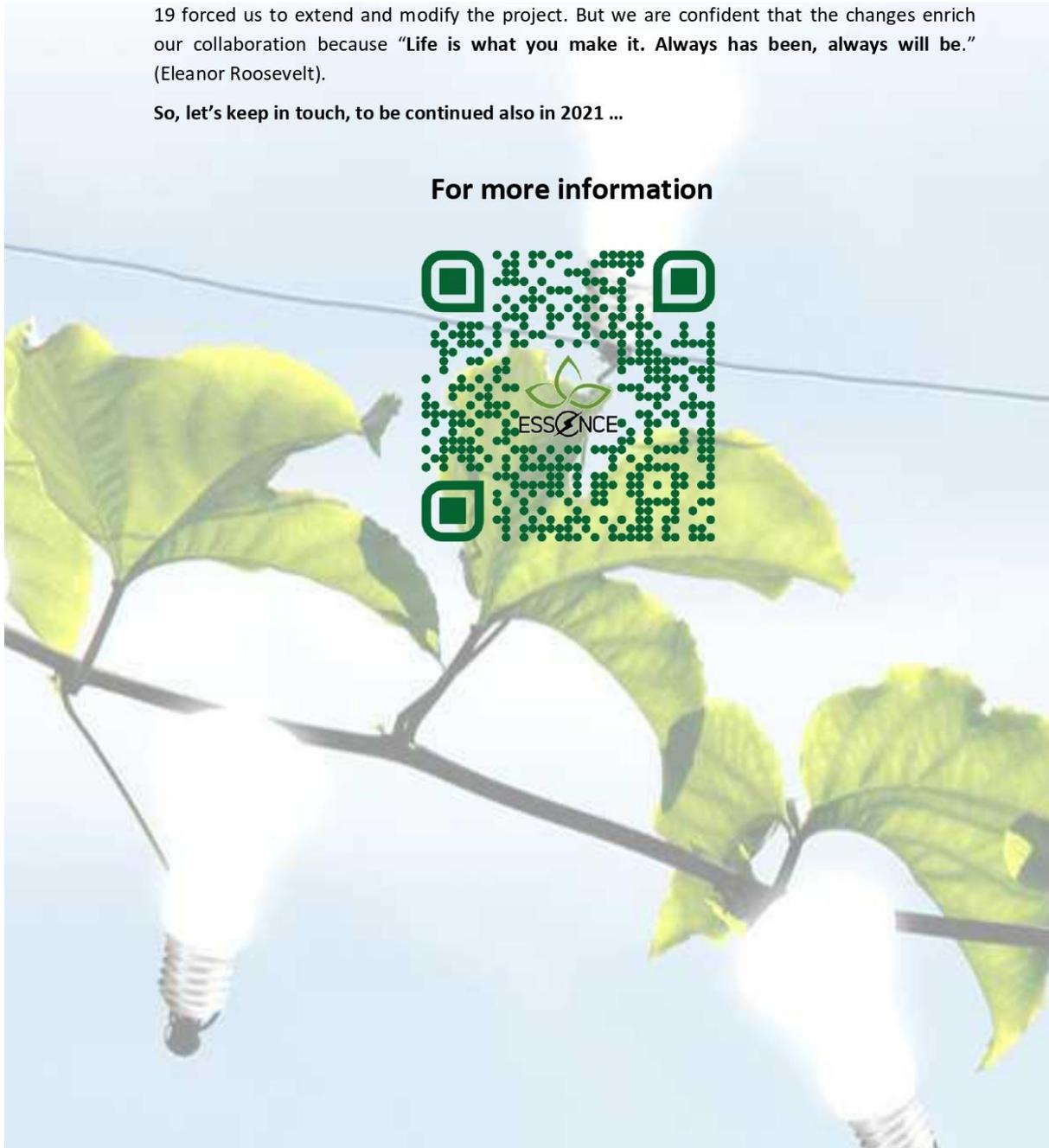


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19 forced us to extend and modify the project. But we are confident that the changes enrich our collaboration because “Life is what you make it. Always has been, always will be.” (Eleanor Roosevelt).

So, let’s keep in touch, to be continued also in 2021 ...

For more information



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Co-funded by the Erasmus+ Programme of the European Union



Establishing Smart Energy System Curriculum at Russian and Vietnamese Universities



Co-funded by the Erasmus+ Programme of the European Union

NEWSLETTER

ISSUE # 6. ESSENCE SUMMER SCHOOL



SUMMER SCHOOL in BRIEF

SUMMER SCHOOL



Dates: **July 05 – 28, 2021**

Venue: **online**

Main organizer & host: **Ural Federal University (UrFU)**

Organizers: **ESSENCE partners**

Workload: **2 ECTS credits**

Certificates: **ESSENCE certificate, UrFU certificate,**

TPU Python course certificate (optional)



Co-funded by the Erasmus+ Programme of the European Union

Project number: 586087-EPP-1-2017-1-LV-EPPKA2-CBHE-JP (2017-3017/001-001)



SUMMARY: ESSENCE Summer School is an **extra-curricular online educational course**, organized by **ESSENCE consortium** and hosted by **Ural Federal University**. Under the School, student teams are offered to solve a real-life smart energy case using knowledge, skills and competences learnt and trained during the delivered video lectures, practical training and expert consultations developed and provided by the academic staff of ESSENCE consortium.

To acquire practical skills in **project-based activities** and to identify one's effective role in a **multidisciplinary team**, pursuing to solve an **industry-oriented problem**

To discover **comprehensive interdisciplinary knowledge** in the field of SES and to modify one's perception of their **practical application** for future development

To exchange knowledge, experience, best practices, feedback from the piloting and to conduct master classes/ demonstrations; to **exchange opinions** with the main stakeholders

To categorize **main features of SES** design, control and prospective planning based on new technological solutions, mathematical approaches, and analysis

To **disseminate project results** and to attract attention to the new curricula (incl. future student engagement)

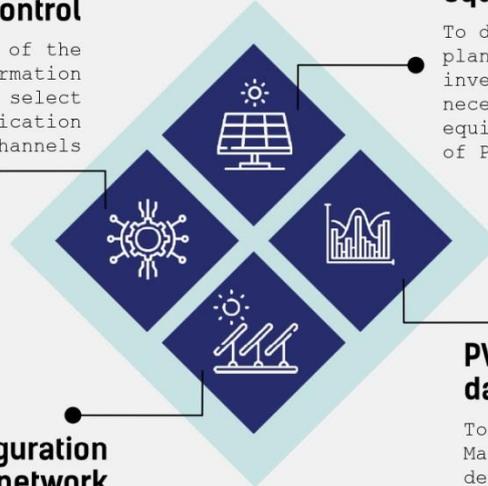
To test the **virtual mobility** of academic staff and students as well as **new teaching techniques** of blended teaching and learning

OVERALL GOAL:
to sustain implementation of Smart Energy System (SES) core curricula at RU/VN HEIs



Smart grid digital control

To design the architecture of the distribution feeder information and communication system, select the type of communication controllers, channels



Photovoltaic power plant equipment selection

To design the photovoltaic power plant: to choose solar panels, inverters, converters (if necessary) alternating current equipment. To provide estimation of PV construction expenses.

PV power plant day-ahead forecasting

To learn how to implement Machine Learning methods to develop the model of photovoltaic power plants forecasting for the day-ahead perspective.

Optimal reconfiguration of distribution network

To find hourly optimal configuration of distribution network given the hourly values of active and reactive loads and PV plant generation forecast.



Co-funded by the Erasmus+ Programme of the European Union

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VIDEO LECTURES										
05.07.2021	06.07.2021	07.07.2021	08.07.2021	09.07.2021	12.07.2021	13.07.2021	14.07.2021	15.07.2021	16.07.2021	
OFFICIAL OPENING OF THE SUMMER SCHOOL 	Technologies of energy conversion in Smart Energy Systems 	Economics for Smart Energy Systems 	Smart Grids, Micro Grids and Super Grids 	Optimization in Smart Energy Systems 	Power System Analysis 	Energy Management Systems 	Digital Technologies for Protection and Communication 	Information and communication technologies for Smart Energy System 	Online collaboration tools for students 	
	Machine Learning For Power Industry 	Machine Learning For Power Industry 	Machine Learning For Power Industry 	Machine Learning For Power Industry 	Machine Learning For Power Industry 	Machine Learning For Power Industry 	Machine Learning For Power Industry 	Machine Learning For Power Industry 	Machine Learning For Power Industry 	Presentation and Public speech
	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering
ON-LINE CONSULTATIONS BY LECTURERS					FINAL EVENT					
19.07.2021	20.07.2021	21.07.2021	22.07.2021	23.07.2021	27.07.2021		28.07.2021			
Technologies of energy conversion in Smart Energy Systems 	Smart Grids, Micro Grids and Super Grids 	Optimization in Smart Energy Systems 	Energy Management Systems 	Digital Technologies for Protection and Communication 	TEAM PRESENTATION OF PROJECTS		TEAM PRESENTATION OF PROJECTS		ANNOUNCEMENT OF WINNERS, AWARD CEREMONY 	
Economics for Smart Energy Systems 	Optimization in Smart Energy Systems 	Power System Analysis 	Machine Learning For Power Industry 	Information and communication technologies for Smart Energy System 						
Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 	Python for Energy System Engineering 						



Co-funded by the Erasmus+ Programme of the European Union

Project number: 586087-EPP-1-2017-1-LV-EPPKA2-CBHE-JP (2017-3017/001-001)



Alla Logacheva, PhD



 Economics for SES

Anton Prokhorov, PhD



 Microgrids, Smartgrids and Supergrids

Ilia Shushpanov, PhD



 Digital Technologies for Protection and Communication

Alexandra Khalyasmaa, PhD



 Public Speech and Presentation Design
 AI & Machine Learning in SES

Stanislav Eroshenko, PhD



 Energy Management Systems
 AI & Machine Learning in SES



Raphael Caire, PhD



 Information and Communication Technologies for SES

Anna Mutule, PhD



 Technologies of Energy Conversion in SES

Dusan Medved, PhD



 Online Collaboration Tools

Le Xuan Thanh, PhD



 Optimization in SES

Truong Viet Anh, PhD



 Power System Analysis

KEY STAFF: EXPERTS



Stanislav Eroshenko, PhD,
Summer School case
developer



Fedor Nepsha, PhD,
analyst, platform &
solutions development
department



Konstantin Nikishin, PhD,
chief development officer,
engineer-entrepreneur,
IntelLAB LLC



Anton Prokhorov, PhD,
associate professor,
power industry expert



Dmitrijs Nikitins, Acting CTO
technology and
entertainment company



Pavel Matrenin, PhD,
expert of Machine
Learning



Andrey Gofman, PhD,
expert of Russian energy
company

KEY PLAYERS: STUDENT TEAMS



TBD_1
Les Latinos
OKO team
French group 4



HUMG



3-in-1
BIHER
TITANS

**19 teams with 55 members
reached the final**



TD Folks
HLP



Green light
ISKRA



P3 TUKE



Ice Cream
Energy



Solx



Half & Half



MindCon
Miracle Workers



Team	Expert I	Expert II	Expert III	Expert IV	Expert V	Expert VI	Total
3-in-1 (UrFU)	83	92	57	81	90	77	480
TBD_1 (INP)	71	87	55	72	70	77	432
Half&Half (TPU)	70	72	53	71	65	72	403
French Group 4 (INP)	75	82	47	59	66	73	402
Les Latinos (INP)	74	73	48	59	73	74	401
Ice scream (INRTU)	72	79	45	64	57	60	377
OKO team (INP)	68	71	47	52	47	71	356
HLP (HCMUTE)	78	49	74	66	56	31	354
SolX (RTU)	75	40	58	58	71	39	341
P3 - TUKE (TUKE)	69	46	64	64	63	32	338
Green light (KSPEU)	59	73	29	62	52	62	337
TD Folks (HCMUTE)	62	55	44	44	45	71	321
Iskra (KSPEU)	61	45	62	60	53	38	319
TITANS (UrFU)	41	62	33	45	51	64	296
HUMG (HUMG)	92	32	54	46	41	15	280
BIHER (UrFU)	76	34	53	48	51	15	277
Miracle Workers (NEFU)	54	40	22	46	39	53	254
MindCon (NEFU)	61	24	54	48	35	24	246
Energy (INRTU)	67	22	48	24	36	11	208



THE BEST VIDEO ABOUT THE TEAM



Karlis Gicevskis



Devansh Vashista



Solx

WATCH the VIDEO: youtu.be/OYF3ykeip6Q or





EXPERT BOARD SPECIAL PRIZE



HUMG



Le Ngoc Linh



Vu Van Khai



Nguyen Hong Trung



Pham Trung Nghia



3rd PLACE



French group 4



Victor Ducret



Renaud Kemdang



Mathilde Portal





SUMMER SCHOOL WINNERS: 2nd PLACE

SUMMER SCHOOL



2nd PLACE

TOMSK
POLYTECHNIC
UNIVERSITY

Half & Half



Ruslan Imankulov



Ivan Tamoshkin



Mikhail Chernobrov



Project number: 586087-EPP-1-2017-1-LV-EPPKA2-CBHE-JP (2017-3017/001-001)



SUMMER SCHOOL WINNERS: 1st PLACE

SUMMER SCHOOL



1st PLACE

Ural Federal
University
named after the first President
of Russia B.N. Yeltsin

3-in-1



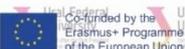
Mikhail Senyuk



Andrew Bramm



Bakhtiyor Goziev



Project number: 586087-EPP-1-2017-1-LV-EPPKA2-CBHE-JP (2017-3017/001-001)



1st PLACE





Théo Chassaigne
Balkisu Tita Doh
Thanh Danh Le Ngo



TBD_1

FREE PUBLICATION



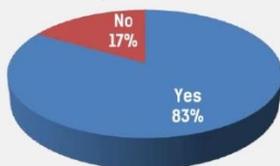
URFU SPECIAL PRIZE



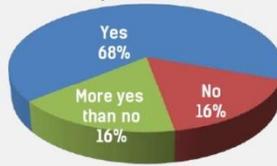
ESSENCE PRIZE



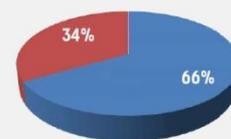
Is it your first online SS experience?



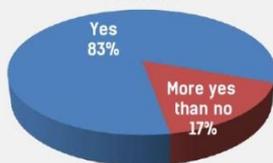
Do you find online format acceptable for SS?



How do you rate your interaction with students as a lecturer/mentor?



Do you find pre-recording format suitable for SS lectures?



How do you rate SS case?



- Students communicated well online, they asked for assistance
- Students didn't communicate well online, but occasionally asked for assistance

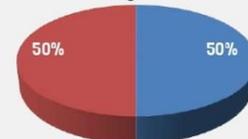
Was the participation in SS interesting for you?



If SS is organized online next year, will you participate?



How do you evaluate your workload during SS?

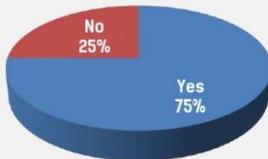


- I had to solve many organizational issues with students and it took a lot of time
- I had to solve many organizational issues with students, but it did not take much time

FEEDBACK from EXPERTS



Is it your first participation in SS as an expert?



Do you find online format acceptable for SS?



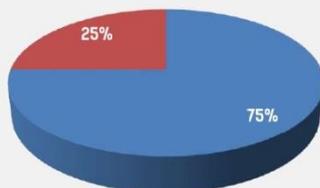
Was the participation in SS interesting for you?



If SS is organized online next year, will you participate?

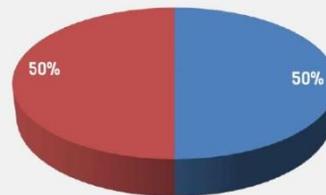


How do you rate SS case?



- Difficult but interesting
- Unchallenging but interesting

How would you evaluate the quality level of presented SS projects?

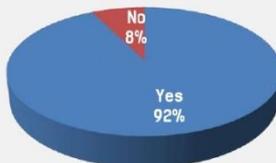


- Most of the students had good presentations, provided technically correct decisions and answered well to questions
- Most of the students had good presentations, provided technically correct decisions but answered weakly to questions

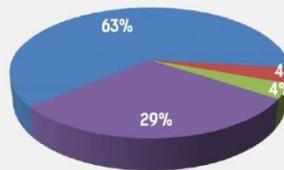
FEEDBACK from STUDENTS



Is it your first online SS experience?

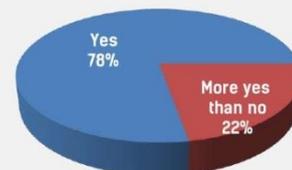


Do you find online format acceptable for SS?

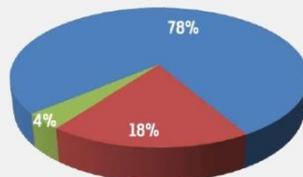


- Yes
- No
- More no than yes
- More yes than no

Do you find pre-recording format suitable for SS lectures?

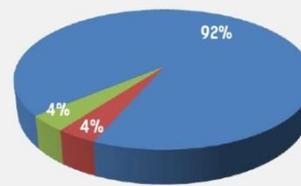


Was the educational part of SS useful for you?



- Yes
- More yes than no
- More no than yes

How do you rate SS case?

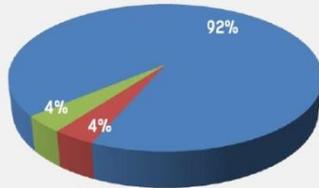


- Difficult but interesting
- Unchallenging but interesting
- Difficult and not interesting

FEEDBACK from STUDENTS

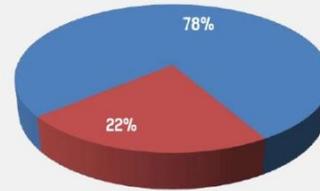


How do you rate the course "Python for engineering application"?



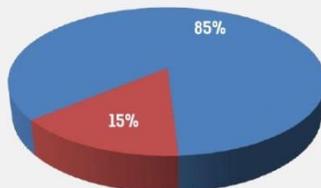
- The course and information support were well organized
- The course was well organized, but information support was not well implemented
- The course and information support were not well organized

How do you rate SS technical implementation?



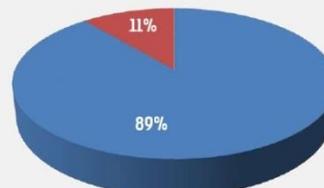
- UrFU online training platform worked properly, technical support of all online activities was well organized
- UrFU online training platform didn't always work properly, but all problems were quickly fixed. Technical support of online activities was well organized

Was the mentor helpful to you?



- Yes
- To some extent

How do you evaluate the work experts during SS final event?

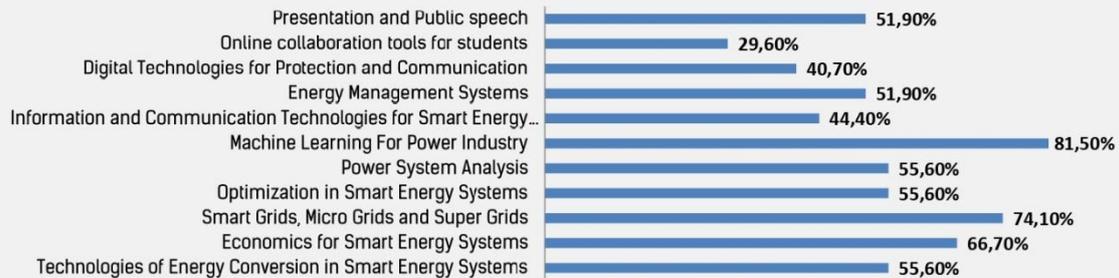


- The experts asked correct questions. The questions were clear and understandable
- The experts asked correct questions, but the questions were not always clear and understandable

FEEDBACK from STUDENTS



Which of the presented pre-recorded video lectures did you find useful and / or interesting for you?

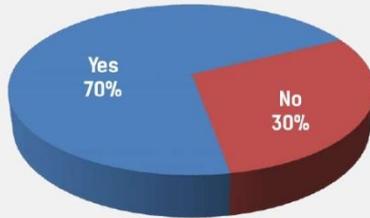


Which of the provided online consultations did you find useful and / or interesting for you?

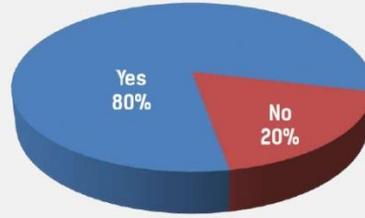




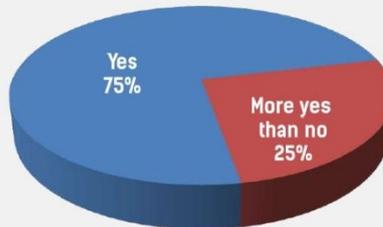
If the Summer School is organized online next year, will you participate in it?



If the Summer School is held in face-to-face format next year, will you participate in it?



Was the participation in SS interesting for you?



The educational part was very interesting and full of new information for me. Most of the online consultations were useful and helped our team to better understand the case tasks. The organizers did really a great job... And also, the competition with other teams was so exciting!
Andrew Bramm, student at UrFU, Russia

I liked the way it was organized, everything was made at the high level... I'm very surprised by the quality of presentations presented by students.
Fedor Nepsha, expert from INTELAB LLC

Everything was really interesting and cool! While we are studying, we need such experience like ESSENCE summer school!
Saina Smetanina, student at NEFU, Russia

The mentors are not typical sir/student type, they are very friendly. Loved the consultations. It's nothing like I ever saw... Thank you!
Anudeep Kolluri, student at Bharath University, India

The project case seemed at first to be quiet complex to be solved by student teams; it required extensive knowledge and practical skills in SES; also challenge to work in multidisciplinary, multinational teams and in some cases only remotely. However, the final presentations showed that there are highly motivated and skilled students. We are impressed by the achievements!
Diana Zalostiba, ESSENCE project coordinator from RTU, Latvia

Participating was interesting and rewarding as it provided useful information about solar panels and their implementation.
Evgeniy Repev, student at KSPEU, Russia

I was really amazed by the instructors of the summer school. They were always available whenever I had questions. They gave us many valuable lectures, which will be our foundation for the upcoming career. Winning the prize of this Summer School helps me gain more confident in myself. Thanks to all the ESSENCE Summer School organizers!
Thanh Danh Le Ngo, student at Grenoble INP, France

I liked to see students cooperate in particular tasks also individually and mutually
Dusan Medved, mentor and lecturer from TUKE, Slovakia

I liked the collaboration of multiple universities providing us the exposure & healthy competition. If we have had face-to-face Summer School, I am sure we would have communicated well enough with other teammates, but in the virtual mode, me & my team communicated with our Mentor a lot... The dedication & effort of our Mentor helped us to understand new material more easily.
TEJA P C, student at Bharath University, India

Annex 4 Project-related publications made by partners

Period/ date	Dissemination channel	Dissemination type	Name of project activity / event	Dissemination level	Link to publication
Riga Technical University (P1/RTU)					
2018-2021	Internet (P1/RTU website)	Project page	Informational about the project and its realization	International	link
2018-2021	Social media (Facebook)	Posts and reposts	Project news and events	International	n/a
2018-2021	ESSENCE website, subscribed users	ESSENCE newsletter	Project news and events	International	n/a
28.07.2021	Internet (P1/RTU website)	News	Noslēgusies viedās enerģētikas vasaras skola	National	link
22.06.2021	Internet (Labsoflatvia website)	News	Iespēja piedalīties viedās elektroenerģētikas vasaras skolā	National	link
19.06.2021	Internet (P1/RTU website)	News	ESSENCE: the international Summer School in the field of smart energy. Apply now!	National	link
19.06.2021	Internet (P1/RTU website)	News	Studenti aicināti piedalīties enerģētikas vasars skolā	National	link
19.06.2021	Intranet (P1/RTU intranet ORTUS)	News	Studenti aicināti piedalīties enerģētikas vasars skolā	Institutional	link
03.06.2021	Internet (P1/RTU website)	News	Studenti aicināti piedalīties enerģētikas vasaras skolā	National	link
03.06.2021	Internet (RTU faculty page)	News	Studenti aicināti piedalīties enerģētikas vasaras skolā	Local	link
03.06.2021	Internet (RTU faculty page)	News	Studenti aicināti piedalīties enerģētikas vasaras skolā	Local	link
27.05.2021	Intranet (P1/RTU intranet ORTUS)	News	ESSENCE: the International Summer School in the field of Smart Energy. APPLY now!	Institutional	link
27.05.2021	Intranet (P1/RTU intranet ORTUS)	News	Aicina studentus piedalīties starptautiskā viedās enerģētikas tematikai veltītā vasaras skolā ESSENCE	Institutional	link
30.03.2021	Internet (ESSENCE website)	News	Quality of curriculum implementation	International	link
09.10.2019	Popularized publications	Proceedings of IEEE 60th Intern. Scientific Conference on Power and Electrical Engineering (RTUCON); indexed in IEEE/Scopus	"Quality assurance in developing of international electrical engineering study programs" D.Zalostiba; J.Caiko; A.Ziravecka; A.Patlins; N.Kunicina; L.Ribickis	International	
19.03.2019	Internet (ESSENCE website)	News	ESSENCE Partner Meeting and Training on the Advanced Teaching Techniques	International	link

13.11.2018	Internet (ESSENCE website)	News	Cross coaching between Erasmus+ projects	International	link
06.11.2018	Intranet (P1/RTU intranet ORTUS)	News	RTU vadīts projekts ESSENCE prezentēts 18 ES valstu vēstniekiem Krievijā	Institutional	link
06.11.2018	Internet (P1/RTU website)	News	RTU vadīts projekts ESSENCE prezentēts 18 ES valstu vēstniekiem Krievijā	National	link
05.07.2018	Internet (ESSENCE website)	News	A3.2.1. Training seminar on curriculum development and course content in Riga	International	link
21.05.2018	Intranet (P1/RTU intranet ORTUS)	News	"RTU koordinē viedās enerģētikas mācību programmu izveidi Krievijas un Vjetnamas universitātēs"	National	link
06.02.2018	Intranet (P1/RTU intranet ORTUS)	News	"RTU iesaistīsies viedās enerģētikas studiju programmas izveidē Vjetnamā un Krievijā"	Institutional	link
Grenoble Institute of Technology (P2/Grenoble INP)					
2018-2021	Internet (P2/Grenoble INP website)	Project page	Information about the project and its realization	International	Link
2018-2021	Intranet (P2/Grenoble INP)	Newsletters	Project news and events	Institutional	Link
2018-2021	ESSENCE website, subscribed users	ESSENCE newsletter	Project news and events	International	
2018-2021	Social media (Facebook)	Reposting ESSENCE news	Project news and events	International	
15.01.2018	Professional networks (SEEDS, IEEE)	Survey broadcasted to SES experts in France (> 1000 experts) and to others	Survey results	International	
Technical University of Kosice (P3/TUKE)					
09.02.2018	Internet (P3/TUKE Technicom website)	Project page	Information about the project and its realization	National	link
10.04.2018	Internet (P3/TUKE department website)	Project page	Information about the project and its realization	National	link
2018-2021	ESSENCE website, subscribed users	ESSENCE newsletter	Project news and events	International	-
2018-2021	Social media (Facebook)	Posts and reposts	Project news and events	International	-
28.03.2018	Internet (P3/TUKE website)	News	Assessment visits to P7 KSPEU	International	link
14.04.2018	Internet (P3/TUKE website)	News	Assessment visits to P6 UrFU	International	link
14.04.2018	Internet (P3/TUKE website)	News	Assessment visits to P8 NEFU	International	link

14.05.2018	Internet (P3/TUKE website)	News	Training on curriculum development and course content at P2/Grenoble INP	International	link
21.05.2018	Internet (ESSENCE website)	News	Assessment visit to P7/KSPEU	International	link
24.05.2018	Internet (P3/TUKE website)	News	Training on curriculum development and course content at P3/TUKE	International	link
12.06.2018	Internet (P3/TUKE website)	News	Training on curriculum development and course content at P1/RTU	International	link
27.07.2018	Internet (ESSENCE website)	News	Training on curriculum development and course content at P3/TUKE	International	link
27.08.2018	Social media (ESSENCE FB page)	Post	Training on curriculum development and course content at P3/TUKE	International	link
01.12.2018	Internet (ESSENCE website)	News	Seminar for specialists and professionals	International	link
04.12.2018	Social media (ESSENCE FB page)	Post	Seminar for specialists and professionals	International	link
05.12.2018	University journal (SK)	Press releases	Information about the project and its realization	National	link
15.04.2019	Internet (P3/TUKE website)	News	Presentation of advanced teaching techniques for SES at P1/RTU	International	link
21.05.2019	Internet (ESSENCE website)	News	Erasmus+ teaching mobility at VSB TU Ostrava, Czech Republic	International	link
16.04.2020	Internet (ESSENCE website)	News	Seminar for specialists and professionals	International	link
21.05.2021	Internet (ESSENCE website)	News	Online quality assurance visit at P7/KSPEU	International	link
16.07.2021	Social media (ESSENCE FB page)	Post	Online quality assurance visit at P7/KSPEU	International	link
22.05.2021	Internet (P3/TUKE department website)	News	Summer school - SMART technologies in power engineering	National	link
13.09.2021	Internet (ESSENCE website)	News	Online quality assurance visit at P6/UrFU	International	link
15.09.2021	Social media (ESSENCE FB page)	Post	Online quality assurance visit at P6/UrFU	International	link
Tomsk Polytechnic University (P4/TPU)					
2018-2021	Internet (P4/TPU website)	Project page (RU)	Project listing in grant inventory	National	link
2018-2021	Internet (P4/TPU website)	Project page (EN)	Project listing in grant inventory	International	link
2020-2021	Internet (P4/TPU website)	Project page (RU)	Information about the project and its realization	National	link
2018-2021	ESSENCE website, subscribed users	ESSENCE newsletter	Project news and events	International	

April 2018	Intranet (P4/TPU intranet)	Newsletter	Newsletter of the Department of International Grants of TPU	Institutional	link
February 2019	Intranet (P4/TPU intranet)	Newsletter	Newsletter of the Department of International Grants of TPU	Institutional	link
06.02.2018	Internet (Fondsmena.ru)	Press releases	Information about ESSENCE project and support from the public organization FONDSMENA	National	link
24.05.2018	Internet (ESSENCE website)	News	Training of TPU and INRTU colleagues in April 2018 in Grenoble	International	link
14.08.2018	Internet (P4/TPU website)	News	Results of WP1. Preparation and TPU's staff training	National	link
14.08.2018	Internet (Regnum portal)	News	Results of WP1. Preparation and TPU's staff training (repost)	National	link
15.08.2018	Internet (News of Siberian Science)	News	Results of WP1. Preparation and TPU's staff training (repost)	National	link
14.08.2018	Internet (Energosmi.ru)	News	Results of WP1. Preparation and TPU's staff training (repost)	National	link
13.09.2018	Internet (ESSENCE website)	News	P4/TPU hosts the ad hoc ESSENCE Partner Meeting	International	link
14.09.2018	Social media (ESSENCE FB page)	Post	P4/TPU hosts the ad hoc ESSENCE Partner Meeting	International	link
22.10.2018	Internet (ESSENCE website)	News	TPU presented the ESSENCE project to the ambassadors of 18 EU countries	International	link
22.10.2018	Social media (ESSENCE FB page)	Post	TPU presented the ESSENCE project to the ambassadors of 18 EU countries	International	link
24.11.2018	Internet (ESSENCE website)	News	Information session with TPU academic staff	International	link
05.04.2019	Internet (ESSENCE website)	News	TPU welcomes ESSENCE associated partner, SIEMENS	International	link
22.05.2019	Internet (ESSENCE website)	News	Recruitment for academic mobility program	International	link
26.12.2019	Internet (ESSENCE website)	News	ESSENCE QA and PMT meetings in Tomsk	International	link
25.02.2020	Internet (ESSENCE website)	News	Recruitment for academic mobility program	International	link
14.03.2020	Internet (ESSENCE website)	News	Piloting results	International	link
06.06.2020	Internet (ESSENCE website)	News	Information session for industrial partners and program implementation	International	link
30.12.2020	Internet (ESSENCE website)	News	Recruitment of students for modernized master programs	International	link

25.05.2021	Internet (P4/TPU website)	News	Summer school announcement (RU)	International	link
27.05.2021	Internet (P4/TPU website)	News	Summer school announcement (EN)	International	link
25.05.2021	Internet (Tomsk.bezformata.com)	News	Summer school announcement (repost)	Local	link
27.05.2021	Social media (P4/TPU FB)	Post	ESSNECE summer school	National	link
27.05.2021	Social media (P4/TPU twitter)	Post	ESSNECE summer school	National	link
31.05.2021	Internet (ESSENCE website)	News	Recruitment of students for modernized master programs	International	link
10.06.2021	Internet (ESSENCE website)	News	Recruitment for academic mobility program	International	link
09.07.2021	Internet (P4/TPU website)	News	Dessimation of summer school interim results	National	link
14.07.2021	Internet (Atomic-energy.ru)	News	Dessimation of summer school interim results (repost)	National	link
23.07.2021	Internet (ESSENCE website)	News	Signing of the ageement on academic mobility within ERASMUS+ KA1	International	link
30.09.2021	Internet (P4/TPU website)	News	Resume of the project and final conference (preparation of materials for news)	National	link
11.10.2021	Internet (ESSENCE website)	News	Arrival of academic mobility students	International	link
22.10.2021	Social media (ESSENCE FB page)	Post	Arrival of academic mobility students	International	link
Irkutsk National Research Technical University (P5/INRTU)					
2018-2021	Internet (P5/INRTU website)	Project page (RU)	Information about the project and its realization	National	link
2018-2021	Internet (P5/INRTU website)	Project page (EN)	Information about the project and its realization	International	link
2018-2021	ESSENCE website, subscribed users	ESSENCE newsletter	Project news and events	International	
2018-2021	Social media (Facebook)	Posts and reposts	Project news and events	International	
22.12.2017	Internet (P5/INRTU website)	News	Project launch	National	link
06.03.2018	Internet (P5/INRTU website)	News	Kick-off meeting at P7/KSPEU	National	link
06.03.2018	Social media (P5/INRTU FB)	Post	Kick-off meeting at P7/KSPEU	National	link
21.02.2018	Popularized publications	University newspaper "Gorod IRNITU"	Project launch	Institutional	
20.05.2018	Internet (ESSENCE website)	News	Kick-off meeting at P7/KSPEU	International	link

03.07.2018	Social media (ESSENCE FB page)	Post	Kick-off meeting at P7/KSPEU	International	link
21.05.2018	Internet (ESSENCE website)	News	Assessment visit of P1/RTU experts to P5/INRTU	International	link
13.04.2018	Internet (P5/INRTU website)	News	Partner meeting at P2/Grenoble INP	National	link
22.05.2018	Internet (ESSENCE website)	News	Partner meeting at P2/Grenoble INP	International	link
03.07.2018	Social media (ESSENCE FB page)	Post	Partner meeting at P2/Grenoble INP	International	link
24.05.2018	Internet (P5/INRTU website)	News	Training of P5 staff at P2/Grenoble INP	National	link
24.05.2018	Internet (ESSENCE website)	News	Training of P5 staff at P2/Grenoble INP	International	link
20.09.2018	Internet (P5/INRTU website)	News	Ad hoc meeting at P4/TPU	National	link
20.09.2018	Social media (P5/INRTU FB)	Post	Ad hoc meeting at P4/TPU	National	link
22.09.2018	Internet (Website of Irkutsk regional division of Russian Union of Mechanical Engineers)	News	Ad hoc meeting at P4/TPU	Local	link
15.10.2018	Internet (ESSENCE website)	News	Presentation of ESSENCE project at the conference	International	link
15.10.2018	Social media (ESSENCE FB page)	Post	Presentation of ESSENCE project at the conference	International	link
October	Popularized publications	Local newspaper "Sibirskiy energetik"	Publication "To be ahead"	Local	
11.01.2019	Internet (news website Bez formata)	News	Project launch and realization	National	link
06.06.2019	Internet (P5/INRTU website)	News	Recruitment for master program "Digital power engineering"	National	link
13.06.2019	Mass media	INRTU TV 23 channel, program "Your prospect"; repost to TEK-TV channel about the problems of Russian fuel and energy complex modernization)	Recruitment for master program "Digital power engineering"	National	link
20.09.2019	Internet (ESSENCE website)	News	Presentation of ESSENCE project at the conference	International	link
28.10.2019	Social media (ESSENCE FB page)	Post	Presentation of ESSENCE project at the conference	International	link
10.10.2019	Internet (ESSENCE website)	News	Presentation of ESSENCE project at the conference	International	link
30.10.2019	Social media (ESSENCE FB page)	Post	Presentation of ESSENCE project at the conference	International	link

23.02.2020	Internet (ESSENCE website)	News	Program and course piloting at P5/INRTU	International	link
06.08.2020	Internet (P5/INRTU website)	News	Implementation of the master program "Digital power engineering"	National	link
07.08.2020	Social media (P5/INRTU FB)	Post	Recruitment for master program "Digital power engineering"	National	link
26.01.2021	Internet (ESSENCE website)	News	Signing agreements with industry and consortium members	International	link
26.01.2021	Social media (ESSENCE FB page)	Post	Signing agreements with industry and consortium members	International	link
04.05.2021	Internet (ESSENCE website)	News	Partner meeting at TPU	International	link
11.05.2021	Social media (ESSENCE FB page)	Post	Partner meeting at TPU	International	link
30.06.2021	Internet (ESSENCE website)	News	Presentation of ESSENCE project at the conference	International	link
30.06.2021	Social media (ESSENCE FB page)	Post	Presentation of ESSENCE project at the conference	International	link
24.05.2021	Internet (P5/INRTU website)	News	ESSENCE summer school announcement	National	link
26.05.2021	Social media (P5/INRTU FB)	Post	ESSENCE summer school announcement	National	link
02.07.2021	Internet (ESSENCE website)	News	Recruitment for master program "Digital power engineering"	International	link
14.07.2021	Social media (ESSENCE FB page)	Post	Recruitment for master program "Digital power engineering"	International	link
07.07.2021	Internet (P5/INRTU website)	News	ESSENCE summer school launch	National	link
23.07.2021	Internet (P5/INRTU website)	News	First graduates of ESSENCE master program	National	link
26.07.2021	Social media (P5/INRTU FB)	Post	First graduates of ESSENCE master program	National	link
10.08.2021	Internet (P5/INRTU website)	News	ESSENCE Summer School comes to an end	National	link
17.09.2021	Internet (ESSENCE website)	News	Announcement of ESSENCE final conference	International	link
17.09.2021	Social media (ESSENCE FB page)	Post	Announcement of ESSENCE final conference	International	link
06.10.2021	Internet (ESSENCE website)	News	ESSENCE final event	International	link
06.10.2021	Social media (ESSENCE FB page)	Post	ESSENCE final event	International	link
11.11.2021	Internet (P5/INRTU website)	News	ESSENCE project results at P5/INRTU	National	link
15.11.2021	Internet (ESSENCE website)	News	ESSENCE project results at P5/INRTU	International	link

15.11.2021	Social media (ESSENCE FB page)	Post	ESSENCE project results at P5/INRTU	International	link
Ural Federal University (P6/UrFU)					
2018-2021	Internet (P6/UrFU website)	Project page	Information about the project and its realization	National	link
2018-2021	ESSENCE website, subscribed users	ESSENCE newsletter	Project news and events	International	-
2018-2021	Social media (Facebook)	Posts and reposts	Project news and events	International	-
31.01.2018	Social media (P6/UrFU VK)	Post	Project launch	National	Link
06.02.2018	Internet (Fond Smena website)	News	Project launch	National	Link
11.05.2018	Internet (CIGRE RU website)	News	Project launch	National	Link
31.01.2018	Internet (P6/UrFU website)	News	Project launch	National	Link
05.02.2018	P6/UrFU Intranet, e-mailing	Newsletter	Project launch	Institutional	
18.12.2019	Internet (ESSENCE website)	News	AI & ML in SES" course was presented at the conference in UrFU	International	Link
07.10.2019	Social media (YouTube)	Promo video	Project results piloting promo Video: Summer University	International	Link
20.07.2020	Social media (YouTube)	Promo video	Project results piloting promo Video: Internship Artificial Intelligence	International	Link
25.05.2021	Social media (ESSENCE Summer School FB group)	Post	Summer School promo-video, invitation for participants	International	Link
26.07.2021	Social media (ESSENCE Summer School FB group)	Post	Summer School promo-video, intro of the Final Event	International	Link
05.04.2021	Internet (ESSENCE website)	News	Over 1000 international students attended open online lectures at P6/UrFU	International	Link
28.03.2019	Internet (P6/UrFU website)	News	Partner meeting at P1/RTU	National	Link
30.01.2021	Internet (ESSENCE website)	News	P6/UrFU announces the launch of an international master degree program in power engineering in 2022	International	Link
01.03.2021	Internet (ESSENCE website)	News	Open lecture at P6/UrFU	International	Link
18.03.2021	Internet (ESSENCE website)	News	About information session	International	Link
12.05.2021 - 02.08.2021	Social media (ESSENCE Summer School FB group)	Posts	ESSENCE Summer School moderation, consultation, dissemination	International	Link

21.06.2021 - 03.08.2021	Social media (ESSENCE Summer School Telegram group)	Posts	ESSENCE Summer School dissemination, coordination	International	Link
17.03.2021	Internet (P6/UrFU website)	News (e.g., on the project/HEI website, intranet)	About information sessions for students	National	Link
20.05.2021	Internet (P6/UrFU website)	News (e.g., on the project/HEI website, intranet)	Online Internships	International	link
29.07.2021	Internet (P6/UrFU website)	News (e.g., on the project/HEI website, intranet)	About ESSENCE Summer School	National	Link
30.07.2021	Internet (P6/UrFU website)	News (e.g., on the project/HEI website, intranet)	About ESSENCE Summer School	International	Link
26.08.2020	Internet (P6/UrFU website)	News (e.g., on the project/HEI website, intranet)	About Smart Energy Systems	National	Link
18.05.2021	Internet (P6/UrFU website)	News (e.g., on the project/HEI website, intranet)	ESSENCE summer school opening	National	Link
27.09.2021	Internet (P6/UrFU website)	News (e.g., on the project/HEI website, intranet)	Project realization	National	Link
28.08.2021	Internet (P6/UrFU website)	News (e.g., on the project/HEI website, intranet)	Lecture on Smart Power Industry	International	Link
Kazan State Power Engineering University (P7/KSPEU)					
2018-2021	Internet (P7/KSPEU website)	Project page (International Office)	Information about the project and its realization	National	Link
2018-2021	Internet (P7/KSPEU website)	Project page (Department)	Information about the project and its realization	National	link
2018-2021	ESSENCE website, subscribed users	ESSENCE newsletter	Project news and events	International	
2018-2021	Social media (Facebook)	Posts and reposts	Project news and events	International	
12.02.2018	Internet (P7/KSPEU website)	News	Project launch	National	link
15.02.2018	Internet (P7/KSPEU website)	News	KSPEU was visited by representatives of foreign universities	National	link
27.09.2018	Internet (P7/KSPEU website)	News	Ad hoc meeting at P4/TPU	National	link
01.10.2019	Internet (P7/KSPEU website)	News	A new bilingual master degree program	National	link
08.04.2020	Internet (P7/KSPEU website)	News	Implementation of the Erasmus+ program in an online format	National	link

30.04.2020	Internet (P7/KSPEU website)	News	A student of the ERASMUS+ program presented the project at an international conference.	National	link
18.05.2020	Internet (P7/KSPEU website)	News	SES master degree program structure	National	link
28.05.2020	Internet (P7/KSPEU website)	News	Excellent students of the ERASMUS+ ESSENCE program.	National	link
02.06.2020	Internet (P7/KSPEU website)	News	The implementation of the ESSENCE project continues at KSPEU.	National	link
15.06.2020	Internet (P7/KSPEU website)	News	Experience of practical training online.	National	link
04.08.2020	Internet (P7/KSPEU website)	News	Recruiting for a master's degree program in English, developed within the framework of the Erasmus+grant.	National	link
17.08.2020	Internet (P7/KSPEU website)	News	KSPEU team has prepared the best international youth global forecast for the development of the fuel and energy sector	National	link
17.08.2020	Internet (P7/KSPEU website)	News	Admission campaign 2020 at P7/KSPEU	National	link
08.09.2020	Internet (P7/KSPEU website)	News	Online Implementation of the Erasmus+program	National	link
31.08.2020	Internet (ESSENCE website)	News	Admission campaign 2020 at P7/KSPEU	International	link
22.09.2020	Internet (P7/KSPEU website)	News	Excellent students of the ERASMUS+ ESSENCE program.	National	link
19.10.2020	Internet (P7/KSPEU website)	News	Partnership with Grenoble INP	National	link
16.02.2021	Internet (P7/KSPEU website)	News	A joint project of KSPEU with Grenoble INP.	National	link
18.02.2021	Internet (P7/KSPEU website)	News	KSPEU team presents a global forecast of the future energy sector	National	link
18.02.2021	Social media (Twitter)	Social Media (e.g., facebook)	KSPEU team presents a global forecast of the future energy sector	International	link
02.03.2021	Internet (P7/KSPEU website)	News	Lecture by a representative of an industrial partner at KSPEU.	National	link
21.04.2021	Internet (ESSENCE website)	News	ESSENCE master students in P7/KSPEU adopted the experience of the best power engineering specialists	International	link

03.03.2021	Internet (P7/KSPEU website)	News	A team consisting of students from group o of the Erasmus+ program participates in the "Case-in" championship	National	link
25.03.2021	Internet (ESSENCE website)	News	Joint project of P7/KSPEU and P2/Grenoble INP	International	link
30.03.2021	Internet (ESSENCE website)	News	P7/KSPEU students' advances	International	link
22.04.2021	Internet (ESSENCE website)	News	ESSENCE master students in P7/KSPEU adopted the experience of the best power engineering specialists	International	link
22.04.2021	Internet (P7/KSPEU website)	News	ESSENCE master students in P7/KSPEU adopted the experience of the best power engineering specialists	National	link
28.04.2021	Internet (P7/KSPEU website)	News	Erasmus+ ESSENCE students took part in the youth day "TEF-2021"	National	link
28.04.2021	Social media (P7/KSPEU VK)	Social Media (e.g., facebook)	Erasmus+ ESSENCE students took part in the youth day "TEF-2021"	National	link
14.05.2021	Internet (P7/KSPEU website)	News	A partner meeting of the ERASMUS+ ESSENCE consortium was held in Tomsk	National	link
20.05.2021	Internet (ESSENCE website)	News	A series of information sessions held by P7/KSPEU	International	link
24.05.2021	Internet (P7/KSPEU website)	News	KSPEU will participate in the development and implementation of the Erasmus+ ESSENCE summer school	National	link
17.06.2021	Internet (P7/KSPEU website)	News	A student of the ESSENCE Erasmus+ program spoke at the final of the "Case-in" championship in Moscow	National	link
21.06.2021	Internet (P7/KSPEU website)	News	Registration for Erasmus+ ESSENCE Summer school	National	link
21.06.2021	Social media (P7/KSPEU Instagram)	Post	Registration for Erasmus+ ESSENCE Summer school	National	link
21.06.2021	Social media (P7/KSPEU Twitter)	Post	Registration for Erasmus+ ESSENCE Summer school	National	link
23.06.2021	Internet (P7/KSPEU website)	News	KSPEU continues to train students in the field of SES	National	link
05.07.2021	Internet (P7/KSPEU website)	News	Opening of the ESSENCE Summer School	National	link
06.07.2021	Internet (P7/KSPEU website)	News	P7/KSPEU first graduates of ESSENCE master program defended master theses	National	link

06.07.2021	Internet (ESSENCE website)	News	P7/KSPEU first graduates of ESSENCE master program defended their master theses	International	link
28.07.2021	Internet (P7/KSPEU website)	News	Accreditation of the ESSENCE Master's Program	National	link
28.07.2021	Social media (P7/KSPEU VK)	Post	Accreditation of the ESSENCE Master's Program	National	link
29.07.2021	Internet (P7/KSPEU website)	News	Closing of the ESSENCE Summer School	National	link
29.07.2021	Social media (P7/KSPEU VK)	Post	Closing of the ESSENCE Summer School	National	link
03.08.2021	Internet (Grid company website)	News	Grid company representative Timur Musaev mentor of the finalists of the ESSENCE project	National	link
24.08.2021	Internet (P7/KSPEU website)	News	TATAISENERGO discussed the implementation of the ERASMUS+ ESSENCE program.	National	link
24.08.2021	Social media (P7/KSPEU VK)	Post	TATAISENERGO discussed the implementation of the ERASMUS+ ESSENCE program.	National	link
19.08.2021	Internet (P7/KSPEU website)	News	Students of Erasmus+ ESSENCE program will go to France	National	link
19.08.2021	Social media (P7/KSPEU VK)	Post	Students of Erasmus+ ESSENCE program will go to France	National	link
19.08.2021	Social media (P7/KSPEU Instagram)	Post	Students of Erasmus+ ESSENCE program will go to France	National	link
09.09.2021	Internet (P7/KSPEU website)	News	All graduates of ESSENCE master program are employed at enterprises	National	link
09.09.2021	Social media (P7/KSPEU VK)	Post	All graduates of ESSENCE master program are employed at enterprises	National	link
13.09.2021	Internet (P7/KSPEU website)	News	KSPEU continues to implement Erasmus+ grant program	National	link
13.09.2021	Social media (P7/KSPEU VK)	Post	KSPEU continues to implement Erasmus+ grant program	National	link
17.09.2021	Internet (P7/KSPEU website)	News	KSPEU teachers will take part in the dissemination conference of the Erasmus+ ESSENCE project	National	link
06.10.2021	Internet (P7/KSPEU website)	News	News on Dissemination Conference and partner meeting	National	link

22.11.2021	Internet (P7/KSPEU website)	News	Russian universities are ready to export education in the field of smart energy systems	National	link
26.11.2021	Internet (P7/KSPEU website)	News	The first module of the Power engineering and electrical technology Professional retraining program has ended	National	link
North-Eastern Federal University (P8/NEFU)					
2018-2021	Internet (P8/NEFU website)	Project page	Information about the project and its realization	National	link
2018-2021	ESSENCE website, subscribed users	ESSENCE newsletter	Project news and events	International	
14.12.2017	Internet (P8/NEFU website)	News	Information about the project and its realization	National	link
13.12.2017	Internet (News website TASS)	News	Information about the project and its realization	National	link
01.03.2018	Internet (P8/NEFU website)	News	Kick-off meeting at P7/KSPEU	National	link
14.03.2018	Internet (P8/NEFU website)	News	Assessment visit of P3/TUKE	National	link
12.04.2018	Internet (P8/NEFU website)	News	Partner meeting at P2/Grenoble INP	National	link
25.09.2018	Internet (P8/NEFU website)	News	Ad hoc meeting at P4/TPU	National	link
20.12.2018	Internet (P8/NEFU website)	News	Info session for administrative staff	National	link
25.01.2019	Internet (P8/NEFU website)	News	Information session for industrial partners	National	link
15.02.2019	Internet (P8/NEFU website)	News	Information session for scientific partners	National	link
14.07.2021	Internet (P8/NEFU website)	News	ESSENCE summer school announcement	National	link
Ho Chi Minh City University of Technology and Education (P9/HCMUTE)					
2018-2021	Internet (P9/HCMUTE website)	Project page	Information about the project and its realization	National	link
05.02.2018	Internet (P9/HCMUTE website)	News	ESSENCE assessment visit at HCMUTE	National	link
10.04.2018	Internet (P9/HCMUTE website)	News	ESSENCE meeting at Grenoble INP, France	National	link
30.05.2018	Internet (P9/HCMUTE website)	News	ESSENCE training trip to RTU, Latvia	National	link
20.09.2018	Internet (P9/HCMUTE website)	News	ESSENCE trip to Tomsk Polytechnic University, Russia	National	link
15.09.2020	Internet (P9/HCMUTE website)	News	News from ESSENCE project: Special coronavirus focus: challenge or opportunity?	National	link

10.12.2020	Internet (P9/HCMUTE website)	News	ETAP Realtime equipment hand-over ceremony	National	link
10.05.2021	Internet (P9/HCMUTE website)	News	News from ESSENCE Project: ESSENCE Summer School	National	link
22.06.2021	Internet (P9/HCMUTE website)	News	News from ESSENCE Project: ESSENCE Summer School promo video	National	link
Hanoi University of Mining and Geology (P10/HUMG)					
02.06.2018	Internet (P10/HUMG website)	Project page	Information about the project and its realization	National	link
08.05.2018	Internet (P10/HUMG website)	News (e.g., on the project/HEI website, intranet)	ESSENCE project announcement	National	link
23.11.2019	Internet (P10/HUMG website)	News	Equipment installation for the ESSENCE project - English version	National	link
23.11.2019	Internet (P10/HUMG website)	News	Equipment installation for the ESSENCE project - Vietnamese version	National	link
23.11.2019	Internet (P10/HUMG website)	News	Equipment installation for the ESSENCE project - Vietnamese version	National	link
18.05.2021	Internet (P10/HUMG website)	News	Announcement of Summer School - Vietnamese version	National	link
18.05.2021	Internet (P10/HUMG website)	News	Announcement of Summer School-English version	National	link
31.07.2021	Internet (P10/HUMG website)	News	News on Summer School - English Version	National	link
31.07.2021	Internet (P10/HUMG website)	News	News on Summer School - Vietnamese Version	National	link
10.04.2021	Internet (P10/HUMG website)	News	News on Dissemination Conference and partner meeting	National	link

Annex 5 Information sessions

Date	Type of information session	Event type	Participants	Link to publication	Supporting documents
Tomsk Polytechnic University (P4/TPU)					
20.11.2018	1. Information session for academic staff	Project presentation	~50 research and academic staff of P4/TPU	link	Pictures, registration list
22.05.2020	2. Information session for industrial partners	Project presentation	15 staff of System Operator of United Power System, Tomsk Distribution Grid Company	link	Presentation
16.05.2019	3. 1st information session for students	Online presentation, information materials distributed via partner university	10 students from CNAM, France	link	Presentation, application letters
06.02.2020	4. 2nd information session for students	Online presentation, information materials distributed via partner university	13 students from CNAM, France	link	Presentation, application letters
28.12.2020, 29.12.2020	5. 3rd information session for students	Online presentation	27 students from P4/TPU	link	Presentation, participants list
28.05.2021	6. 4th information session for students	Online presentation	31 students from RU HEIs	link	Presentation, participants list
08.06.2021	7. 5th information session for students	Online presentation	5 students from CNAM, France	link	Presentation, application letters
Irkutsk National Research Technical University (P5/INRTU)					
01.11.2018	1. Information session for academic staff	Project presentation at INRTU strategic session	~50 administrative, research and academic staff of P5/INRTU	link	Pictures, presentation
17.12.2018	2. Information session for industrial partners	Project presentations	15 staff of Angarsk Energy Retail Company	link	Pictures, presentation, participants lists
21.12.2018	3. Information session for industrial partners	Project presentations	50 staff of PJSC "Irkutskenergo"	link	Pictures, presentation, participants lists
27.04.2019	4. 1st information session for students	Presentation of the master degree program "Digital power engineering" at INRTU Master Program Fair	20 direct participants, students of P5/INRTU (session "Programs of the Institute of Power Engineering"); ~100 participants of the general session where all master programs of INRTU were presented	link link	Pictures, presentation, participants list
13.06.2019	5. 2nd information session for students	Webinar	Live stream for 50 prospective students, 96 views afterwards	link link	n/a

01.02.2021	6. 3rd information session for students	Online presentation of the master degree program "Digital power engineering"	150 Chinese students from partner Shenyang University of Chemical Technology	link	Pictures, presentation, lists of students
21.06.2021	7. 4th information session for students	Presentation of the master degree program "Digital power engineering"	18 bachelor degree students of P5/INRTU	link	Pictures, participants list
Ural Federal University (P6/UrFU)					
04.10.2018	1. Information session for academic staff	Project presentation	~15 young research staff of P6/UrFU	link	Pictures, presentation
19.11.2018	2. Information session for administrative and academic staff	Project presentation	~ 25 administrative and academic staff of P6/UrFU	link	Pictures, participants list, presentation
28.11.2018	3. Information session for academic staff and industrial partners	Project presentation	~ 40 persons: academic staff of P6/UrFU, representatives of Federal Grid Company, System Operator, Prosoft Systems, Scientific Center of United Power System of Russia, Power Equipment Producers, Energy Service Companies	link	Pictures, participants list, presentation
06.12.2018	4. Information session for industrial partners	Project presentation	~ 50 representatives of Industry and visitors of the International Forum "Russian Grids"	link	Pictures
05.11.2019	5. Information Session for students	Presentation about the project programs	~200 students, international office staff, administration of the Bharat University and BVM Engineering College	link	Pictures, Program Leaflet
24.02.2021	6. Information session for students	Online presentation about the project and project programs at the open lecture "Digital transformation of the power industry"	~ 380 Indian students	link	Pictures, participants list, presentation
04.03.2021	7. Information session for students	Online presentation of the project and programs (internships)	18 students from ENSIE (France)	link	Pictures, presentation
17.03.2021	8. Information session for students	Online presentation of project and project programs at the open lecture "Digital transformation of the power industry"	~ 520 students of Pimpri Chinchwad College of Engineering, India	link	Pictures, participants list, presentation

13.04.2021	9. Information session for students	Online presentation of the project and project programs	~ 40 students of Novosibirsk State Technical University	link	Screenshots, Presentation
Kazan State Power Engineering University (P7/KSPEU)					
25.10.2018	1. Information session for academic staff	Project presentation	38 administrative, academic and research staff, industrial partners	link	Pictures, participants list, presentation
20.11.2018	2. Information session for industrial partners	Project presentation	20 representatives of industrial partners	n/a	Pictures, participants list, presentation
11.02.2019	3. Information session for students	Presentation of the master program "Smart Energy System"	55 students of P7/KSPEU	n/a	Pictures, participants list
14.05.2020	4. Information session for students	Online presentation of the master program "Smart Energy System"	25 students of P7/KSPEU	link	Pictures, presentation
15.03.2021	5. Information session for students	Presentation of master program "Smart Energy System"	20 students of Kazan National Research Technological University	link	Pictures, participants list, presentation
16.03.2021	6. Information session for students	Presentation of master program "Smart Energy System"	15 students of Kazan National Research Technical University after A. N. Tupolev	link	Pictures, participants list, presentation
				link	
31.03.2021	7. Information session for industrial partners	Presentation of the project and project programs	15 representatives of the industrial partner "Grid company"	link	Pictures, participants list, presentation
				link	
12.04.2021	8. Information session for students	Presentation of master program "Smart Energy System"	39 students of P7/KSPEU	link	Pictures, participants list, presentation
				link	
13.04.2021	9. Information session for students	Presentation of master program "Smart Energy System"	20 students of P7/KSPEU	link	Pictures, participants list, presentation
				link	
14.04.2021	11. Information session for students	Presentation of master program "Smart Energy System"	20 students from the scientific society and members of the youth business incubator at P7/KSPEU.	link	Pictures, participants list, presentation
				link	
				link	
				link	
				link	
				link	
23.04.2021	12. Information session for students	Presentation of master program "Smart Energy System"	17 students of KIU after V. G. Timiryasov	link	Pictures, participants list, presentation
				link	

28.04.2021	13. Information session for students	Presentation of master program "Smart Energy System"	25 students of Kazan State University of Architecture and Engineering	link	Pictures, participants list, presentation
				link	
05.05.2021	14. information session for students	Online presentation of master program "Smart Energy System"	25 students of P7/KSPEU	link	Pictures, presentation.
				link	
07.05.2021	15. Information session for students	Online presentation of master degree program "Smart Energy System"	40 students of P7/KSPEU	link	Pictures, presentation
				link	
18.05.2021	16. Information session for students	Presentation of master degree program "Smart Energy System"	26 students from Kazan (Volga Region) Federal University	link	Pictures, participants list, presentation
				link	
North-Eastern Federal University (P8/NEFU)					
30.10.2018	1. 1st information session for students	Project presentation	12 students of P8/NEFU	link	Presentation
31.10.2018	2. 2nd information session for students	Project presentation	21 students of P8/NEFU	link	Pictures, presentation
20.12.2018	3. Information session for academic staff	Information session for partner's academic staff	15 administrative, academic, research staff, students.	link	Presentation
25.01.2019	4. 3rd information session for students	Presentation of the project and master degree program "Smart energy system"	18 students of P8/NEFU	link	Pictures, presentation
28.01.2019	5. Information session for industrial partners	Project presentation	14 administrative representatives of industrial partners	link	Pictures, presentation
Ho Chi Minh City University of Technology and Education (P9/HCMUTE)					
21.02.2019	1. Information session for academic staff and students	Project presentation	40 academic and research staff, students, international academic partners (from Taiwan)	link	Pictures, presentation
16.05.2019 20.05.2019 26.06.2019 26.08.2019 04.10.2019	2. Series of 5 information session for students	5 presentations of the project and courses in class	265 students of P9/HCMUTE	n/a	Presentation
22.05.2019	3. Information session for students and industrial partners	Brief presentation and hand-to-hand leaflet delivery in Job fair event	1000 students and 100 industrial representatives	link	Pictures, presentation
15.10.2019	4. Information session for industrial partners	Project presentation	24 participants from both HCMUTE delegation and the Pacifico Company	link	Pictures, presentation

15.05.2020 25.06.2020 02.07.2020 06.07.2020 08.07.2020	5. Series of 5 online information session for students	5 online presentations of the project and courses	167 students of P9/HCMUTE	n/a	Presentation
28.08.2020 04.09.2020 02.10.2020 03.10.2020	6. Series of 4 information session for students	4 presentations of the project and courses in class	145 students of P9/HCMUTE	n/a	Presentation
21.06.2021 24.06.2021 25.06.2021 29.06.2021 01.07.2021 03.07.2021 06.07.2021 09.07.2021 12.07.2021 13.08.2021	7. Series of 10 information session for students	10 presentations of the project and courses in class	288 students of P9/HCMUTE	n/a	Presentation
13.10.2021	8. Information session for students	Online information session jointly organized by P9 and P10 about the project and its results	40 students of P9 and P10	n/a	Pictures, presentation
Hanoi University of Mining and Geology (P10/HUMG)					
25.10.2018	1. Information session for academic staff	Project presentation at the annual academic conference of HUMG	80 administrative, academic and research staff of the University.	link	Pictures, presentation
01-02.11.2018	2. Information session for industrial partners	Project presentation at Vietnam Symposium on Advances in Offshore Engineering (VSOE) (https://vsoe2018.sciencesconf.org/)	Over 100 participants: Minister of Vietnam Natural Resources and Environment, Director General of Vietnam Administration of Seas and Islands; Deputy Director General of Vietnam Petroleum Institute; Ambassador of the Republic of Ireland in Vietnam; scientists and industry from over 25 countries.	link	Pictures, presentation
31.5.2019	3. 1st information session for students	Roll-up presentation at Job Fair at HUMG	200 participants: administrative and academic staff, students and industrial partners at P10/HUMG	link	Pictures, banners
16.10.2020	4. Information session at the National Erasmus day	Project presentation at Erasmus Days for HEIs in Vietnam, hosted by Ho Chi Minh city University of Natural Resources and Environment	~50 representatives of Vietnamese HEIs	link	Pictures, Presentation, Standees

18.5.2021	5. 2nd information session for students	Presentation about ESSENCE Summer School	43 students of P10/HUMG	link	Participants lists, presentation
13.10.2021	6. 3rd information session for students	Online information session jointly organized by P9 and P10 about the project and its results	40 students of P9 and P10	n/a	Pictures, presentation



ERASMUS+ ESSENCE PROJECT Final Conference

BLENDED FORMAT
September 27-28, 2021
Ural Federal University,
Academic Council Hall,
Mira St. 19, Ekaterinburg, Russia



The ESSENCE conference seeks to reach several objectives:

- To present the final products of Erasmus+ ESSENCE project
- To provide the ground for fruitful networking of representatives of academia, industry and wider society
- To initiate the discussions between stakeholders regarding current state, trends and challenges of engineering education in Russia and Vietnam

September 27, 2021

Opening ceremony

12.00-12.10	Dr. Sergey Kortov, First Vice-Rector (RU)	Welcoming speech
12.10-12.20	Dr. Diana Zalostiba, ESSENCE project coordinator (LV)	Welcoming speech

Trends of power engineering education

12.20-12.30	Dr. Diana Zalostiba, ESSENCE project coordinator (LV)	ESSENCE project presentation
12.30-12.40	NEO Russia	Global impact of Erasmus+ projects on higher education
12.40-12.50	Dr. Segrey Sarapulov, Director of UPEI (RU)	Power engineering education in Russia: Ural school
12.50-13.00	Dr. Tran Thanh Hai, Rector of HUMG (VN)	Power engineering education in Vietnam
13.00-13.10	Dr. Raphael Caire, Grenoble INP (FR)	ESSENCE core curriculum development
13.10-13.20	Dr. Anton Prokhorov, TPU (RU)	ESSENCE core curriculum presentation
13.20-14.30	RU and VN ESSENCE partners	Experience of ESSENCE master programs development
14.30-15.00	Q&A session	
15.00-15.30	Break	

Relevance of engineering higher education to labor market

15.30-15.40	Dr. Anton Prokhorov, TPU (RU)	ESSENCE practical training course
15.40-15.50	Dr. Stanislav Eroshenko, UrFU (RU)	Realization of modernized practical training course
15.50-16.00	Dr. Nguyen Minh Tam, HCMUTE (VN)	Cooperation between FEEE and industry in education
16.00-16.10	Dr. Dusan Medved, TUKE (SK)	University-industry cooperation in EU
16.10-16.20	Dr. Andrei Gofman, JSC-STC FGC UES (RU)	Training of SES engineers of the future: role of industry
16.20-16.30	Dr. Vladimir Pospelov, Federal Grid Company (RU)	Training of SES engineers of the future: role of industry
16.40-16.50	Dr. Aleksei Smushkin, EnergoSK (RU)	Training of SES engineers of the future: role of industry
16.50-17.00	Dr. Konstantin Nikishin, RTSoft (RU)	Training of SES engineers of the future: role of industry
17.00-17.10	Dr. Tran Thai Bao, Manager at BSR Co, Ltd (VN)	Training of SES engineers of the future: role of industry
17.10-17.20	Dr. Nguyen Quang Minh, HUMG (VN)	University-industry cooperation in Vietnam and HUMG
17.20-17.30	Q&A session	
17.30-17.40	Wrapping up and conclusions	

Registration



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Registration



September 28, 2021

ESSENCE Summer school

12.00-12.30 ESSENCE Summer school experience and promotion (zoom parallel sessions)

Quality assurance in engineering education

12.30-12.45 Dr. Anastasia Zhiravetska, RTU (LV)

12.45-12.55 Dr. Diana Zalostiba, RTU (LV)

12.55-13.05 Dr. Stanislav Eroshenko, UrFU (RU)

13.05-13.15 Dr. Kseniya Zaitseva, AEER (RU)

13.15-13.30 Q&A session

Quality assurance in ESSENCE project

ESSENCE transformation under COVID-19 pandemic

Quality assurance of developed ESSENCE disciplines

International accreditation of engineering programs

ESSENCE project dissemination and sustainability

13.30-13.40 Dr. Varvara Panko, INRTU (RU)

13.40-13.50 Dr. Nguyen Vu Lan, HCMUTE (VN)

13.50-14.00 Dr. Alexandra Khalyasmaa, UrFU (RU)

14.00-14.10 Dr. Julia Torkunova, KSPEU (RU)

14.10-14.30 Dr. Diana Zalostiba, RTU (LV)

14.30-15.00 Q&A session

15.00-15.30 Break

Dissemination in the ESSENCE project: lessons learnt

Ensuring ESSENCE sustainability via programs

ESSENCE spin-offs: internships, MOOCs.

ESSENCE spin-offs: professional development programs

ESSENCE partners' long-term plans

Best Erasmus+ practices

15.30-15.40 Dr. Andrei Sozikin, UrFU (UrFU)

15.40-15.50 Dr. Olga Safonkina, MrSU (RU)

15.50-16.00 Dr. Nguyen Vu Lan, HCMUTE (VN)

16.00-16.10 Dr. Nguyen Thi Phuong Thao, HUMG (VN)

16.10-16.30 Q&A session

Joint Programs and Framework for Doctoral Education

Developing Trans-regional information literacy

HCMUTE Erasmus projects

HUMG Erasmus projects

Closing ceremony

16.30-17.00 Closing ceremony

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Annex 7 Project-related presentations made by partners

Partner	Date	Event	Level	Participants	Link to publication
P1/RTU	12.11.2018	Project presentation at ELEMEND (Development of master curricula for Electrical Energy Markets and Engineering Education) project session	International	30	n/a
P1/RTU	19.03.2019	Presentations about ESSENCE and partner universities	Institutional	30	n/a
P1/RTU	09.10.2019	Project presentation at IEEE 60th International Scientific Conference on Power and Electrical Engineering (RTUCON)	International	30	n/a
P1/RTU	30.10.2019	"Ceļā uz viedām energosistēmām"	International	52	n/a
P2/ Grenoble INP	19.11.2020	IEEE event of the French Chapter	International	75	link
P3/TUKE	08.11.2018	Seminar for specialists and professionals	National	125	link
P3/TUKE	07.05.2019	Project presentation within Erasmus+ teaching mobility at VSB TU Ostrava, Czech Republic	Institutional	35	link
P3/TUKE	07.11.2019	Seminar for specialists and professionals	National	135	link
P4/TPU	08.10.2018	Presentation of the project within round table with EU ambassadors	International	140	link
P4/TPU	28.03.2019	Presentation of the project and discussion of cooperation with Siemens Russia	International	8	n/a
P4/TPU, P6/UrFU	30.06.2021	Presentation of the ESSENCE project at Erasmus+ Regional Cluster Meeting	International	300	link
P5/INRTU	16.03.2018 23.05.2018 20.09.2018 04.10.2018 17.04.2019 31.10.2019 27.10.2020 17.06.2021	Discussion of project realization at the meetings of the Department of Power Supply and Electrical Engineering at P5/INRTU	Department	18-24 per meeting	n/a
P5/INRTU	02.10.2018	Presentation of ESSENCE project at the conference	National	30	n/a
P5/INRTU	16.09.2019	Presentation at the conference "Electric power industry in the eyes of youth-2019"	National	50	link

P5/INRTU	02.10.2019	Presentation at the conference "Innovative Smart Grid Technologies Europe (ISGT Europe)",	International	40	link
P6/UrFU	13.02.2020	Presentation of the ESSENCE course within the framework of refresher courses for academic staff at Novosibirsk State Technical University	National	80	link
P6/UrFU	02.10.2019	Project presentation at IEEE day at P6/UrFU	National	40	link
P6/UrFU	15.11.2019	Project presentation within the framework of the "Student of the year" event.	Institutional	10	link
P6/UrFU	23.10.2019	Project presentation on Digital transformation impact on the education process at the conference "Digitalization and information security"	National	50	link
P6/UrFU	28.04.2020	Presentation of the project at the International Tech Conclave (Stanislav Eroshenko time 54:25)	International	2000	link
P6/UrFU	28.01.2021	Project presentation at EEUA Winter Conference "Export of education. Development strategy. Priority 2030"	National	120	n/a
P7/KSPEU	28.04.2021	Project presentation at the international anti-conference "It's possible"	International	74	link
P7/KSPEU	29.01.2018 26.04.2018 28.05.2018 28.09.2018 23.04.2019 25.06.2019 29.10.2019 28.01.2020 24.03.2020 28.04.2020 29.06.2020 19.10.2020 20.10.2020 28.10.2020 17.11.2020 26.01.2021 30.03.2021	Discussion of project realization at the meetings of the Academic Council of the Institute of Power Engineering and Electronics at P7/KSPEU	Institutional	14-17 per meeting	n/a

P7/KSPEU	05.04.2019 05.06.2019 17.06.2019 03.07.2019 03.07.2019 03.09.2019 21.10.2019 03.02.2020 21.02.2020 02.06.2020 16.06.2020 18.09.2020 29.09.2020 11.02.2021 24.02.2021 04.03.2021 12.03.2021 07.04.2021 21.04.2021	Discussion of project realization at the meetings of the Department of Electric Stations at P7/KSPEU	Department	13-15 per meeting	n/a
P10/HUMG	17.04.2018 10.04.2019	Reporting of project realization to P10 Rector and Rector's office	Institutional	15 per meeting	n/a