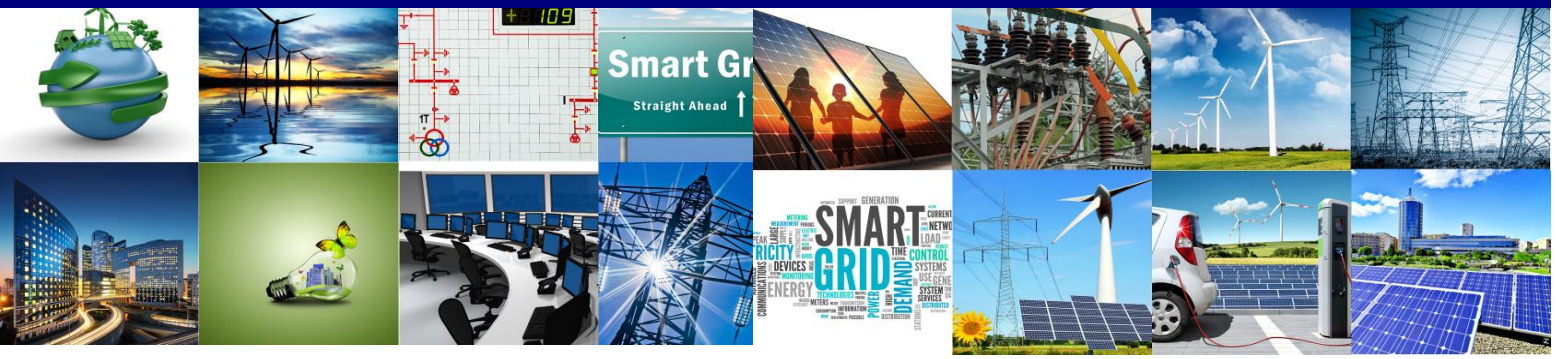
Project No. 609687

FP7-ENERGY-2013-IRP

ELECTRA

European Liaison on Electricity Committed Towards long-term Research Activities for Smart Grids



WP 9

Researcher Exchange

Deliverable D9.3

Workshop for exchange researchers to share best practice and cooperative research ideas

(3rd Period)

19/01/2017

ID&Title	**D9.3** Workshop for exchange researchers to share best practice and cooperative research ideas (3rd Period)	**Number of pages:**	22

Short description (Max. 50 words):

Deliverable 9.3 is defined as a workshop to share best practice and research ideas associated with the researcher mobility programme. This report provides a brief summary of the workshops held in the 3rd reporting period.

Version	Date	Modification's nature
V0.01	16/12/2016	First Draft for Deliverable Structure
V0.02	06/01/2017	Draft for integration of WP contributions
V0.03	10/01/2017	Draft for TOQA reviewer
V1.00	19/01/2017	Released

Accessibility

☒ PU, Public

☐ PP, Restricted to other program participants (including the Commission Services)

☐ RE, Restricted to other groups specified by the consortium (including the Commission Services)

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Executive summary

The ELECTRA Integrated Research Programme (IRP) on smart grids brings together the partners of the EERA Joint Programme on Smart Grids (JP SG) to reinforce and accelerate Europe's medium to long term research cooperation in this area and to drive a closer integration of the research programmes of the participating organizations and of the related national programmes. ELECTRA's joint research activity and collaborative support actions build on an established track record of collaboration and engagement. The project consortium of leading research organisations from 17 different European countries aims to reinforce the EERA JP SG in strengthening coordinated European research, and building support for realizing the European SET Plan objectives in the area of smart grids. The project's joint research activity is establishing and validating proofs of concept that utilise flexibility from across traditional power system boundaries in a holistic fashion using a new control concept, the Web-of-Cells. At the same time, a programme of dedicated actions are being undertaken to accelerate existing coordination efforts established through EERA – and a significant element of this relates to researcher mobility through the ELECTRA Researcher Exchange Programme, ELECTRA REX.

ELECTRA REX offers assistance to support transnational and international researcher exchanges to or from ELECTRA partners and EERA Joint Programme members, that will complement and enhance the collaborative smart grids research undertaken within the joint programme. Through a series of managed REX Calls, applications are invited for one of three types of exchange: Global Exchange, European Exchange, Intra-ELECTRA Exchange. The successfully selected applicants are provided funding for the additional costs of travel, accommodation, and subsistence associated with the exchange visit, and support for participation in an international ELECTRA REX workshop aligned with a technical conference. These workshops have to date provided an opportunity for exchange researchers from the first three REX Calls to share experiences and disseminate their results through international co-authored papers.

This report outlines the nature and value of a number of workshops that have been held in the third reporting period with the express purpose of sharing mobility best practice and cooperative research ideas. This year saw one workshop conducted as part of IEEE PES Innovative Smart Grid Technologies, Europe (ISGT Europe) 2016 in Ljubljana (Slovenia), and one held at the First European Energy Research Alliance Conference, 2016 in Birmingham (UK). These build on the experience from the first ELECTRA REX workshop held as part of the 2015 International Symposium on Smart Electric Distribution Systems and Technologies (EDST) in Vienna (Austria). The workshops themselves are the formal deliverable.

Terminologies

Acronyms

D	Deliverable
EC	European Commission
EDSO4SG	European Distribution System Operators for Smart Grids
EEGI	European Electricity Grid Initiative
EERA	European Energy Research Alliance
EPMC	Exchange Programme Management Committee
INCO	International Cooperation
IRP	Integrated Research Programme
ISGAN	International Smart Grid Action Network
JP	Joint Programme
REX	Researcher Exchange
R&D	Research and Development
SME	Small and Medium-sized Enterprise
SG	Smart Grids
SIRFN	Smart Grid International Research Facility Network
TOQA	Technical Office for Quality Assurance
WoC	Web-of-Cells
WP	Work Package

Definitions

Exchange Researcher	The person who is participating in a hosted researcher exchange experience.
Exchange Programme Manage-ment Committee	The committee of ELECTRA IRP responsible for managing the ad-ministration and selection of researcher exchange proposals
Home Organisation	The institute of which the Exchange Researcher is a normal member of staff or PhD student
Host Organisation	The institute at which a researcher exchange experience takes place, responsible for looking after the Exchange Researcher
Strathclyde University	Coordination body for Researcher Exchange Programme
REX Coordinator	University of Strathclyde
ELECTRA IRP Coordinator	The person responsible for the whole ELECTRA IRP, Luciano Martini of RSE S.p.A

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List of figures and tables

1 Introduction

Deliverable D9.3 was included within the project plan to provide a workshop for the sharing of best practice and supporting the sharing of cooperative research ideas in the third project reporting period. Indeed two separate workshops were held during this period, each contributing to this objective and building on the first ELECTRA REX Workshop on Smart Grid Researcher Exchanges which was held in Vienna, Austria at the EDST 2015 symposium. This report provides a brief outline of these activities.

ELECTRA REX offers the opportunity for European or international researchers (especially those early in their career) to work closely together with leading smart grid research partners from the ELECTRA project and EERA Joint Programme on Smart Grids (JP SG) through an exchange of staff to reinforce and accelerate Europe's medium to long term research cooperation on smart grids. The scheme is open to high quality applicants from research organizations as well as industry, including Small and Medium-sized Enterprises (SMEs). The workshops were held in October 2016 and November 2016, following the operation of the first four ELECTRA REX calls for proposals as shown in Table 1.

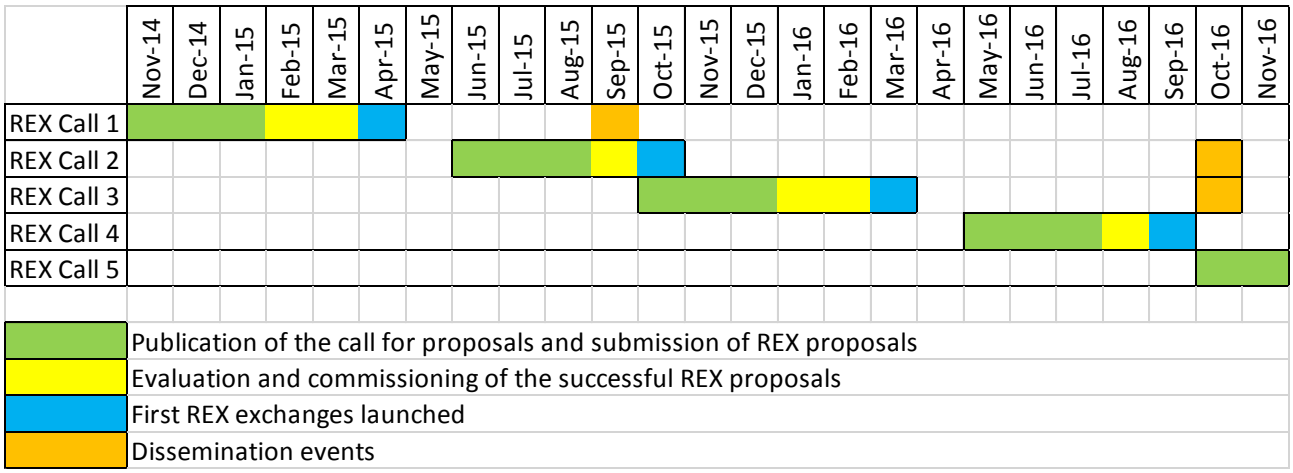

Table 1: REX Calls Timetable

This document therefore supplements the workshops with an outline of the activities undertaken. A fuller account of the findings will be provided in the work package's final deliverable, report D9.4, which will include the results from all six planned REX Calls (Table 2) and complement the work package's earlier deliverables [1], [2].

REX CALL	PUBLICATION	STATE
1	November 2014	Completed
2	June 2015	Mostly completed – one late start
3	October 2015	Mostly completed – one late start
4	May 2016	Mostly completed – one late start
5	October 2016	Ongoing – application evaluation in progress
6	January 2017	-

Table 2: REX Call Publication dates

2 A methodology supporting review and dissemination

The call-based methodology adopted within ELECTRA REX has continued to be followed through this last project period, and as a result both regular review and dissemination of the mobility results has been maintained. The combination of targeted joint publications and the web-hosted abstracts have proved useful in focussing the collaboration between researcher and host towards valuable results. This has also provided a useful outlet for the dissemination of EERA and ELECTRA IRP results. And the implementation of host and researcher questionnaires has further provided valuable oversight and learning from each of the exchange calls, with the result that lessons learned are collated, shared and responded to in subsequent calls. This methodology is illustrated in Figure 1, together with an indication of the status of multiple Calls at the current snapshot in time.

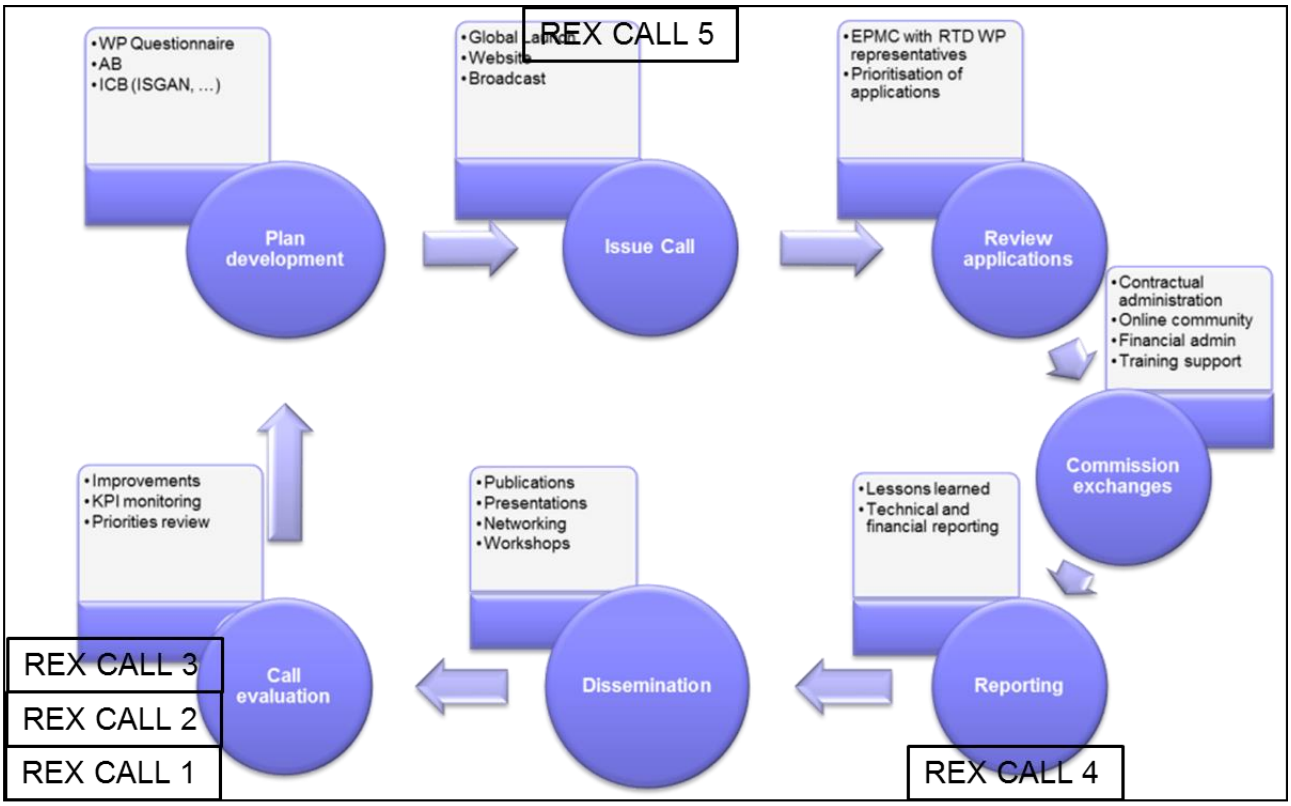

Figure 1: Methodology for managing ELECTRA REX, with a snapshot of multiple Call status

The programme's dissemination and review is complemented by the organisation of workshops aligned with public conferences. Two further workshops have been held during this last review period:

- ELECTRA REX Workshop 2 in Ljubljana (Slovenia), and aligned with IEEE PES Innovative Smart Grid Technologies, Europe (ISGT Europe) 2016
- EERA/ELECTRA REX Workshop 3 in Birmingham (UK), and aligned with the First European Energy Research Alliance Conference, 2016

These events proved successful, reaching out to new and different audiences.

In addition, these were complemented by further meetings and discussions regarding best practice in mobility programmes, which included:

- *Special mobility session at the EERA Summer Strategy Meeting, Trondheim, 28-29 June 2016:* This represented a launch meeting of the EERA Mobility Task Force, and provided an opportunity to share the methodology and lessons learned from the ELECTRA REX programme with representatives from other EERA Joint Programmes and the EERA Secretariat.
- *IRP Coordination Meeting, Brussels, 6 July 2016:* This involved a meeting of the EERA IRP leaders together with the respective EC Project Officers. It provided an opportunity to share the experience to date with the ELECTRA REX mobility programme, and to share lessons learned together with the IRPWind Mobility scheme.

3 ELECTRA REX Workshop 2 – Ljubljana, Slovenia

This event followed a similar pattern to that developed for the first ELECTRA REX Workshop in Vienna in 2015: *(i)* a special papers session at the conference supporting the dissemination of results from the exchanges, and based on the co-authored papers published in the conference proceedings; *(ii)* an internal discussion forum for the exchange researchers to meet together and to share their various experiences of exchange, and provide feedback on the programme.

3.1 Dissemination event

ISGT Europe 2016 represented the sixth in the series of major European events devoted to the challenges and innovations of smart grid technologies. With an audience of over 100 delegates, it provided an excellent opportunity for publicising the results of a number of the researcher exchanges, and for publicising the opportunities for participation in future exchanges. The dedicated ELECTRA REX session took the form of one of the "invited technical and industry sessions", shown within the conference programme in Figure 2 below.

Sunday, October 9	Monday, October 10				Tuesday, October 11	Wednesday, October 12
Tutorials / R8 Chairs Training	Main Conference				Main Conference	Main Conference
Lunch	Lunch				Lunch	Lunch
Tutorials / IEEE PES R8 Chapter Chairs Training	Main Conference				Main Conference	Main Conference
	PMUS, SMART GRID MEASUREMENT, PROTECTION, CONTROL & OPERATIONS	SMART GRID TECHNOLOGIES (FOR POWER GENERATION, TRANSMISSION)	DISTRIBUTED ENERGY RESOURCES AND NETWORK INTEGRATION	ELECTRA REX Researcher Exchange Dissemination		
Welcome Reception	Women in Power event				Gala Dinner	

Figure 2: ISGT Europe'16 Conference programme incorporating ELECTRA REX workshop

This session gave the opportunity for five of the exchange researchers (from Call 2 and Call 3) to share their experiences and results to around twenty delegates in the parallel session. Each of these presentations was based on their refereed co-authored paper which was included within the conference proceedings, and covered a number of valuable aspects of the ELECTRA research programme. These papers are listed below, together with the collaborating institutions:

- Mathias Uslar, Kai Heussen, (OFFIS, DTU), Towards modelling future energy infrastructures – the ELECTRA systems engineering approach

- Junjie Hu, Kai Heussen, Bert Claessens, Lei Sun, Reinhilde D' Hulst (DTU, ZheJiang University, VITO), Toward Coordinated Robust Allocation of Reserve Policies for a Cell-based Power System
- E. Guillo-Sansano, M.H. Syed, A.J. Roscoe, G. Burt, M.J. Stanovich, K. Schoder. (University of Strathclyde, Florida State University), Controller HIL testing of real-time distributed frequency control for future power systems
- M. V. Khokhlov, A. Obushevs, A.Mutule (Komi SC, IPE), Optimal PMU Placement for Topological Observability of Power System: Robust Measurement Design in the Space of Phasor Variables
- P. MacDougall, B. Ran, G. Huitema, G. Deconinck (TNO, University of Groningen, University of Leuven), Predictive control for multi-market trade of aggregated demand response using a black box approach

This programme provided the audience with results from a mix of Global Exchanges and ELECTRA exchanges that covered the modelling, experimental testing, observability requirements and market structures for the project's Web of Cells (WoC) distributed control concepts. The question and answer sessions provided a useful exchange of research ideas and enquiries.

Publicity material was provided for all of the ISGT Europe 2016 delegates to support the wider dissemination of the mobility programme opportunities. This took the form of a two-fold flyer, whose cover sheet is shown in Figure 3. This attracted a number of discussions with possible applicants to future calls.

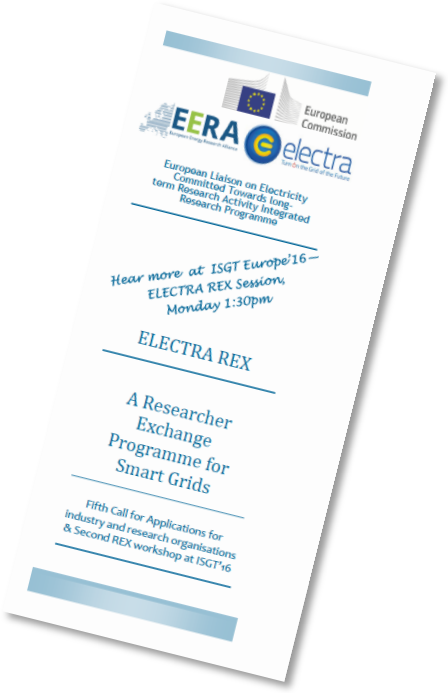

Figure 3: ELECTRA REX flyer prepared for ISGT Europe'16

A similar flyer has been prepared and distributed at a number of other international conferences and workshops, including the UK HubNet Annual Smart Grids Research Symposium (Glasgow, UK), the EERA Annual Conference (Birmingham, UK), IRED'16 (Niagara Falls, Canada) and

associated ISGAN/SIRFN meetings thus complementing and supporting the INCO activity. Publicity is also aided by the project's online presence.

The workshop has been effectively publicized on the ELECTRA web-site and through the November 2016 edition of the on-line newsletter. Moreover both the abstracts of the papers and the presentations delivered by the exchange researchers are available for download from the website.

3.2 Review and feedback session

The five recipients of Call 2/3 exchanges (Figure 4) who had their papers successfully accepted for presentation at ISGT Europe 2016 also participated in the internal discussion forum for a closed review and feedback session.

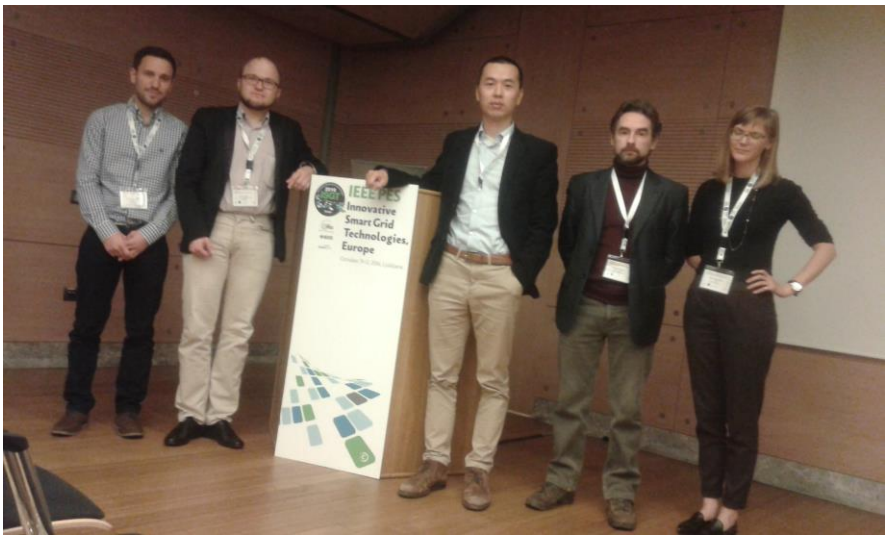

Figure 4: ELECTRA REX researchers participating in ELECTRA REX Workshop

The discussions provided the researchers with an insight to the experiences of others on the mobility programme, and an opportunity to reflect on the experience and raise particular benefits and challenges. The following were collected:

- A number of major personal development benefits from the exchange were noted. These included: obtaining valuable *thinking time*, a period of focused time and effort on research rather than management tasks, exposure to different working environments (including the contrast between academic and industrial contexts).
- The opportunity to open up exposure to new research topics was highly valuable both in the near term and also in relation to developing medium term research team objectives and ongoing dialogue. In one case the exchange researcher was already presenting their second co-authored paper resulting from the exchange at the workshop.
- The application process was considered relatively smooth and straightforward. The limited time between securing the special session slot with the conference organisers and the deadline for paper submission was the biggest challenge experienced in the exchange process.

- The experience of different working cultures was noted as something of a challenge (as well as the aforementioned benefit). This included understanding how best to ensure the availability of laboratory facilities and colleagues.
- The challenge associated with laboratories not being fully ready for the exchange tasks was relatively common. While dialogue before arrival is critical and can mitigate some of these risks, this remained a challenge and should be taken into account in the planning of the first few tasks on arrival. The better awareness of research facilities and laboratories and of project developments (particularly for non-ELECTRA participants) would also improve the level of detail that could be included within the applications and project plans – good applications need good understanding.
- It was suggested that access to a follow-up visit fund would help support ongoing dialogue and timely research cooperation. This could be used to encourage further detailed technical discussions and exploitation planning.
- Improved engagement with the work package or task leads could perhaps enhance the technical value from future exchanges.
- The utilisation of forums or feeds to promote dialogue was discussed, though there were diverse views of the platform that would encourage this.

These provide useful insight for the ongoing operation of the exchange programme.

4 EERA/ELECTRA REX Workshop 3 – Birmingham, UK

The experience gained in operating the ELECTRA REX programme has provided useful input to the efforts of the wider EERA community to identify good practice in researcher mobility. This has been particularly focussed through participation in a newly established mobility task force and a third workshop.

4.1 Widening the identification of best practice – EERA mobility task force

A task force was commissioned by the EERA ExCo in April 2016 to develop a proposal for an operational student and researcher mobility scheme for EERA members active within its different JPs. The ELECTRA REX Coordinator has participated in the task force, sharing the experience of the scheme, and contributing to the design of a questionnaire for collecting relevant experiences at EU, national and international levels. The determination of inspiring and innovative best practices will support the development of an EERA mobility scheme and its application across the energy sector. An excerpt from an early draft of the questionnaire is reproduced in Figure 5.

1. Identification of mobility scheme
   - ✓ Name: (free text entry)
   - ✓ Associated web site: (free text entry)
2. I am familiar with this scheme because:
   - ✓ I have personally participated
   - ✓ Close working colleagues have benefited from it
   - ✓ My organization has benefited from it
   - ✓ I have seen it advertised
   - ✓ Other: (free text entry)
3. This scheme supports the following types of mobility (tick all that apply):
   - ✓ Research organisation to research organization
   - ✓ Research organisation to industry
   - ✓ Industry to research organisation
4. This scheme supports mobility (tick all that apply):
   - ✓ Within an organization
   - ✓ Within single country
   - ✓ Within Europe
   - ✓ Within non-European continent
   - ✓ Between project partners
   - ✓ Between continents
   - ✓ One-way transfers
   - ✓ Two-way exchanges
   - ✓ Provide specific details, e.g. specific countries eligible: (free text)
5. This scheme annually supports:
   - ✓ A few exchanges (<5 per annum)
   - ✓ Several exchanges (5-15 per annum)
   - ✓ A large number of exchanges (>15 per annum)
6. This scheme is open to (tick all that apply):
   - ✓ Students
   - ✓ Early career researchers
   - ✓ Mid-career researchers
   - ✓ Research leaders
   - ✓ Academics only
   - ✓ Other restriction: (free text entry)
7. The scheme supports exchanges of the following duration (tick all that apply):
   - ✓ Visit (less than 2 days)
   - ✓ Short exchange (between 2 days and 2 weeks)
   - ✓ Medium exchange (between 2 weeks and 3 months)
   - ✓ Long exchange (longer than 3 months)
8. The scheme provides funding for (tick all that apply):
   - ✓ Travel and subsistence
   - ✓ Laboratory access costs
   - ✓ Salary or student stipend
   - ✓ Partial funding of these costs
   - ✓ Full funding of these costs
9. Key features of the scheme include (tick all that apply):
   - ✓ Online application
   - ✓ Offline application
   - ✓ Self-defined projects
   - ✓ Prescribed projects
   - ✓ Assistance for conference participation
   - ✓ End of exchange report (brief)
   - ✓ End of exchange reporting (substantial)
   - ✓ One-way exchange
   - ✓ Two-way exchange

Figure 5: Excerpt from draft mobility questionnaire

The ongoing effort in cooperation with the other members of this task force will provide a valuable complement to the work of the ELECTRA REX programme in supporting improved cross-border collaboration through the vehicle of researcher mobility.

4.2 Energy sector dissemination and review workshop

A special dissemination and review session was organised at the First European Energy Research Alliance Conference, 2016 (see Annex 1: First EERA Conference). The event held in Birmingham in November 2016 attracted over two hundred participants to a varied and interdisciplinary programme, all of whom learned of the ELECTRA REX mobility programme and the opportunities for

interdisciplinary research collaboration by way of an EERA success story case study (see Figure 6). The conference programme also included special presentation and discussion sessions at the end of Day 2 under the theme of Joint Programme Development.

EERA success stories

The ELECTRA REX mobility programme for smart grid researchers

Over 25 exchanges involving research organizations and industry to help Europe progress in the development of grid technologies

The ELECTRA IRP's Researcher Exchange (REX) Programme is a mobility scheme for smart grids researcher. It is developed under the ELECTRA Integrated Research Programme (IRP) on Smart Grids, an EU funded project which brings together the partners of the EERA Joint Programme on Smart Grids (JP SG) to reinforce and accelerate Europe's medium to long- term research cooperation in this area and to support integration of research programmes. **ELECTRA REX** offers international and European operators and researchers the opportunity to work closely with EERA & ELECTRA partners through an exchange of staff or research students. The scheme is open to participants from research organisations and industry, including SMEs.

Launched in November 2014 with a first call, and now in its fifth edition, **the ELECTRA-REX Programme has promoted 25 exchanges so far:** fourteen within Europe, involving ELECTRA Partners, JP Smart Grid members and other European organisations ("European exchanges") or solely ELECTRA or JP Smart Grids partners ("Intra-ELECTRA exchanges"); the remaining nine involving organisations from non-EU countries ("Global exchanges").

"The ELECTRA REX mobility programme has attracted significant interest, as well as providing excellent opportunities for in-depth research collaboration between industry and research organisations. From an EERA point of view, it has also supported the Joint Programme in European coordination and international engagement."
Luciano Martini, JP Smart Grids Coordinator

Main achievements of ELECTRA REX are not only the results in terms of exchanges, but also the innovativeness of the overall scheme, based on a well-defined procedure for the whole process: call, selection, execution of the exchange, exploitation and dissemination of results, the latter being one of the most innovative features.
The results of the exchange programmes are exploited and disseminated through collaborative peer-

Figure 6: First EERA Conference Programme and "EERA Success Story" flyer

The dissemination session "Interacting with stakeholders" was used to share the ELECTRA REX approach and experiences with an audience of around thirty researchers from different energy fields. A joint presentation by the ELECTRA REX Coordinator and Massimo Busuoli (NTNU and Mobility Task Force Coordinator) provided an insight to delegates of how mobility might help energy researchers cooperate more and better to solve existing challenges and come up with new solutions for the future (Figure 7).

Figure 7: Joint mobility presentation at the First EERA Conference

The presentation session was followed by a dedicated discussion forum that allowed the participants from a number of differing EERA JPs and backgrounds to consider the nature and needs of effective mobility programmes. The group considered the draft task force questionnaire, offering suggested changes and additions for inclusion in the questionnaire to be issued in early 2017. The following represents some of the comments made:

- The group agreed on the value of mobility, both in terms of personal development and enhancing the research domain. The differing benefits to individuals at different stages in their career were noted.
- In some programmes a mobility component is a compulsory requirement for funded projects (e.g., Euratom).
- The relative benefits of a call-based or open forum approach were discussed. The flexibility and responsiveness of an open forum for applications can sometimes be useful.
- The duration of the mobility term needs to be sufficiently long to support real impact.

5 Conclusions

The ELECTRA REX researcher exchange programme continues to progress through the adoption of the methodology developed in the early stage of the project. This has now seen the operation of four REX Calls in accordance with the plan. The fifth Call is currently at the review stage with the applications under the consideration of the Exchange Programme Management Committee (EPMC). Three ELECTRA REX workshops have now been held, two of which have been held in the last review period. These provided an opportunity to both share experiences and best practice in the operation of mobility activities, and disseminate research results from the periods of exchange. Technical papers were co-authored by the exchange recipients and their hosts, and the inclusion of these in the associated conference proceedings further support the dissemination of exchange results. This report has provided a summary of the workshop activities undertaken during the third year of the project.

Feedback from the workshops has confirmed the appropriateness of the ELECTRA REX methodology, and the researchers attest to the benefits of the exchange in relation to their professional and personal development. Areas for further development and enhancement were noted, including the opportunity to support follow-up visits and stronger engagement with project leaders. Experiences from across the energy sector have further confirmed the widely held view of the values of exchange, and highlighted the relative benefits of both call-based and open programmes. These observations are being taken into the final year of the project, supporting the successful completion of the planned coordination action and enabling the articulation of ongoing requirements for effective collaboration in medium to long term research in smart grids.

6 References

[1] Deliverable D9.1 Exchange programme procedures and documentation, ELECTRA IRP consortium, 2015

[2] Deliverable D9.2 Interim report on exchange programme outputs on the IRP website, ELECTRA IRP consortium, 2016

7 Disclaimer

The ELECTRA project is co-funded by the European Commission under the 7th Framework Programme 2013.

Annex 1: First EERA Conference

The First EERA Conference was hosted in Birmingham (UK), and included one parallel stream on Day 2 associated with the ongoing development of the Joint Programmes, which included the mobility workshop and a presentation of the ELECTRA REX approach. The programme is shown in Figure 8.

EERA Conference 2016

23-25 November 2016, Birmingham (UK)

Building locations can be found on the Birmingham University campus map on pages15-16

	Day 0 - 23/11			
18:00-19:30	Welcoming Reception (IET Birmingham: Austin Court)			
	Welcoming remarks by Adel El Gammal, EERA Secretary General Welcoming Remarks by Prof. Martin Freer, Director of the Birmingham Energy Institute and Director of Birmingham Centre for Nuclear Education and Research Speech by Grant Bourhill, Chief Operating Officer at Energy Systems Catapult (sponsor)			
	Day 1 - 24/11- Block 1			
9:00-10:45	Opening session (Great Hall R6)			
	09:00 Welcome address by Tim Softely, Pro-Vice Chancellor for Research and Knowledge Transfer at the University Birmingham and Hervé Bernard, EERA Chairman. 09:15 European Commission – Deputy Director General for DG RTD (Mr. Patrick Child) 09:35 Keynote speech by Prof. Dr. Marc O. Bettzüge, Professor of Economics and Head of the Chair of Energy Economics, University of Cologne			
	Coffee break			
11:00-12:30	Parallel sessions			
	Energy Systems	Materials	Standardisation/ Coordination	Earth Underground Energies
	(R15) System real-time monitoring and data management	(R9) Materials and their degradation modes	(R8) Harmonized Performance-based Codes and Standards: Research Challenges for Energy Technologies Market Penetration	(R6) Challenges in the development of the subsurface for energy purposes
	Lunch (Great Hall R6)			
	Day 1 - 24/11- Block 2			
13:30-15:15	Parallel sessions			
	(R27) Smart Zero Emission Cities: toolbox	(Y3) Materials and their degradation modes	(R16) IRPs and ECRIAs. Experiences and expectations (1)	(R28) Advances in Drilling and Reservoir-Engineering
	Coffee break			
15:30-17:00	(R27) System enhanced flexibility as a key factor to Renewables integration	(Y3) Modeling of Ageing and degradation mechanism	(R16) IRPs and ECRIAs. Experiences and expectations (2)	(R28) Operation, synergies & interference of competing subsurface users
17:00-18:30	Poster session (Great Hall R6)			
18:30-21:30	Gala Dinner (Great Hall R6)			
21:30	Coach transport to City Centre			
	Day 2 - 25/11- Block 3			
9:00-10:45	Parallel sessions			
	Energy Systems	Materials	Standardisation/ Coordination	Joint Programmes Development
	(R27) Smart Zero Emission Cities: the human factor	(R28) Advance energy materials characterization	(R16) Open source platforms for numerical simulation and model validation of energy technologies	(R28) Interacting with stakeholders - mobility, university and industrial innovation
	Coffee break			
11:00-12:30	(R27) Energy Systems: An integrated effort by industry, public sector and research	(R28) Advance energy materials characterization	(R16) Open source platforms for numerical simulation and model validation of energy technologies	(R28) Discussion tables - sharing of best practices
	Lunch (Great Hall R6)			
13:30-15:00	Closing plenary session with EERA Chairman, Herve Bernard (Great Hall R6)			
15:00-17:00	Site visits (Great Hall R6)			

Figure 8: Outline programme of the First EERA Conference Programme