

MILESECURE-2050

Multidimensional Impact of the Low-carbon European Strategy on Energy Security, and Socio-Economic Dimension up to 2050 perspective

e-Newsletter No. 5, October 2015

Table of contents

At a Glance

Welcome to the fifth issue of MILESECURE-2050 e-Newsletter

Final outputs of WP4

Manifesto Publication in WP5

WP6 Events:

First International Seminar in Rome

Regional Workshop in Warsaw

Regional Workshop in Salford

Upcoming Events

Project planned events

Energy related events



At a Glance

Acronym: MILESECURE-2050

Title:

Multidimensional Impact of the Low-carbon European Strategy on Energy Security, and Socio-Economic Dimension up to 2050 perspective

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Project Number: 320169

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<http://www.milesecure2050.eu/>

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Welcome to the fifth issue of MILESECURE-2050 e-Newsletter

MILESECURE-2050 is a FP7 [SSH.2012.2.2-2](#) project funded by the European Commission. It aims to understand and overcome the political, economic and behavioural trends that led Europe to its difficulties in reducing fossil fuel consumption, and in diversifying its energy balance at rates which guarantee European energy security in the next years (2050), reduce the threat of climate change, and diminish the risk of an energy gap in the coming decades.

MILESECURE-2050 examines scenarios using multiple perspectives which extend to 2050. By doing so, the project will evaluate policy initiatives and their long-term impact on energy security. The 2050 timeframe is used to assess the legitimacy and efficacy of policies in terms of the capacity for societies to transition to energy security and also to consider the long-term socio-economic impact of such options.

The project consists of 7 Work Packages, of which the first three have already been completed:

- ✓ [WP1](#): Analysis of energy policies, trends and existing scenarios from the national to the worldwide level;
- ✓ [WP2](#): Analysis of concrete anticipatory experiences on energy transition at the local level;
- ✓ [WP3](#): Societal processes for energy transition

At the moment MILESECURE-2050 consortium has been finalising tasks connected with [Work Package 4](#): *Modelling approach, analyses, verification and validation issues* and [Work Package 5](#): *Towards a governance of the energy transition processes*.

[WP6](#) and [WP7](#) are devoted respectively to communication and dissemination and to project management and these are implemented along the whole project duration.

MILESECURE-2050 Consortium

The [Consortium](#) is formed by 4 Universities, 4 Research institutes and 3 SMEs, corresponding to 11 European Partners, as follows:

[POLITO](#) – Italy
[MUSTS](#) – The Netherlands
[PLUS](#) – Austria
[USAL](#) – United Kingdom
[IEn](#) – Poland
[LSC](#) – Italy
[ENEA](#) – Italy
[JRC](#) – Belgium
[ECOLOGIC](#) – Germany
[SMASH](#) – France
[EnergSys](#) – Poland

Upcoming Events

[MILESECURE - 2050 Project events](#)

15 December 2015
SAVE THE DATE!!!

[MILESECURE-2050 INTERNATIONAL SEMINAR](#)

THE HUMAN FACTOR IN ENERGY TRANSITION & SECURITY TOWARDS 2050

Multidimensional Knowledge, Innovative Models, Effective Policies

University Foundation,
 11, Rue d'Egmont - 1000
 Brussels, Belgium

Agenda Introduction

Prof. Lombardi, MILESECURE-2050 Project Coordinator (POLITO)

Dr. Domenico Rossetti di Valdalbero, Project Officer, DG RTD, European Commission

Keynote Topics

- ✓ Knowledge
- ✓ Models
- ✓ Policies – Manifesto and policy recommendations

Roundtables: working groups on 3 themes: Knowledge, Models, Policies.

Final products of WP4: Modelling approach, analyses, verification and validation issues

Work Package 4's (WP4) main objective was to define a coherent and comprehensive set of energy scenarios integrating results from work conducted in previous stages of the project. The modelling approach is schematically presented in Figure 1.

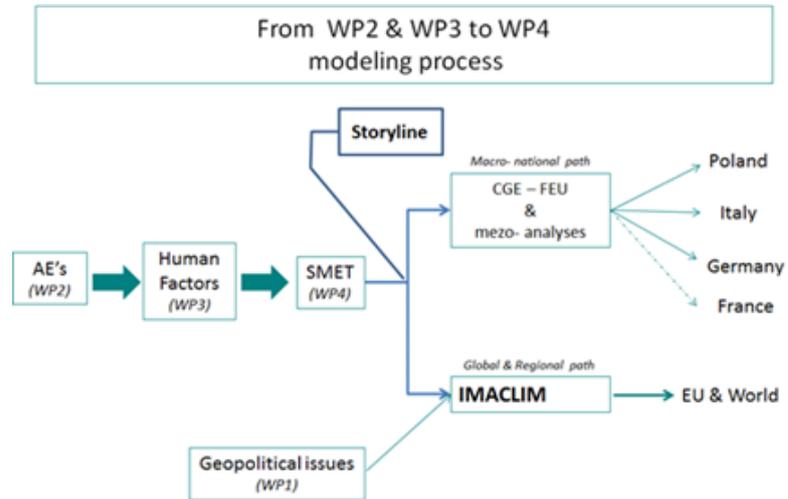


Figure 1: General idea of modelling approach

Scenarios have been developed with attention paid to different levels of development of EU Member States. Data gathered has been consolidated in a Socio Metric Energy Transition Model (SMET) with other relevant indicators providing a consistent multidimensional assessment of economic, social and geopolitical viability of these scenarios, including EU coherence.

Integration of the qualitative inputs into the modelling framework is the most ambitious challenge of the MILESECURE-2050 project and Work Package 4 (WP4) developed a coherent and comprehensive set of energy scenarios integrating results from work carried out in earlier project stages.

The first one is a baseline that corresponds to a reasonable prospect for the future without any implementation of climate policy. Two alternatives scenarios assume different specific assumptions regarding the low energy and carbon transition:

- ✓ The Centralized Scenario (CENT) assumes that Europe will manage its transition through centralized policy regulations and institutions, with no significant changes in social behaviours and technological choices.
- ✓ The Societal Energy Transition (SET) scenario integrates the main features of human factors analysed in work packages two and three (WP2 and WP3). It is based on decentralized energy production and supply, with significant life-style behaviours changes and increasing significantly energy efficiency and savings.

We adopt an original modelling architecture based on the articulation between different types of models that enables the evaluation of the economic and social implications of these alternatives compared to a baseline scenario and at different global and national scales...

The Socio Metric Energy Transition (SMET) fuzzy model bridges the gap between conventionally defined 'storylines' and scenario quantification by translating the qualitative assumptions on scenario variables into numerical indicators and combining them with quantitative information. The SMET modelling structure and methodology aims to estimate LCE technologies market penetration curves parameters.

The first step consisted in building relevant data sets, including (i) qualitative data

Reduced emissions, increased use of renewable energy and energy saving are the key environmental objectives that Europe has embedded in its strategy for 2020 and beyond to face the challenges of climate change and energy security. But changing energy systems has social, cultural, economic, political, geopolitical, and lifestyle implications that risk to be underestimated by traditional and strictly disciplinary studies.

In order to acquire a more comprehensive knowledge on the process of Energy transition, DG Research funded under the FP7 the MILESECURE-2050 Project. The project carried out a research that combined in a single frame a large set of theories and methodologies.

At a first stage the project conducted two different studies: on main trends and policies related to the international and European context; and on a set of 90 European anticipatory experiences of a low carbon society (i.e. local experiences that could be considered as already existing pieces of a future low carbon society) was conducted directly on field.

After that the project team worked to fulfill one of the main tasks of the project: to embody the knowledge coming from these two studies into innovative forecasting models and scenarios.

At the later stage, on the basis of the forecasting exercise, policy guidelines and a manifesto on the transition were drafted.

Both model & scenarios and policy guidelines are aimed to provide indications for European policy making at different levels: from local to European scale. The common element of the itinerary as a whole was the attempt to put the human factor at the centre of the Energy transition process.

This is the background to the International seminar "**THE HUMAN FACTOR IN ENERGY**

consolidation for BAU, CENT and SET scenarios; (ii) compilation, verification and adjustment of data on LCE technologies and (iii) compilation and verification of historical and projected data inputs needed to estimate LCE technology parameters.

All input data sets and estimated S-curve parameters were applied to SMET modelling exercises. These were then used to project the amount of intermittent energy units (wind and pv-solar) and residential passive buildings for each scenario for 2010, 2020 and 2030 for key representative countries (Italy, Germany and Poland) These results define the boundary conditions for two CGE (Computable General Equilibrium) models at country and European scale.

At the European level, the CGE IMACLIM-R has three main implications for the MILESECURE-2050 project:

- 1 the representation of economic disequilibrium, which is endogenously generated by people's inertia in adapting to new economic conditions
- 2 the possible introduction of behavioural assumptions departing from the utility or profit maximizing program under perfect foresight
- 3 the ability to assess the impact of the geopolitical context (energy markets, climate negotiations).

IMACLIM-R provides some innovative features to account for dimensions such as urban form, environmental policies and human behaviours, and integrates outcomes from the SMET approach on the development of key low carbon energies.

Preliminary results from the IMACLIM model through the lens of energy security challenges showed potential positive impacts of societal processes. We find, for example, that urban planning policies and infrastructure transportation measures in a decentralized context of producing and consuming energy (SET scenario) play a key role in energy consumption spending, in particular at the household's level. Furthermore, the assumptions made on the supply side (e.g. a more optimistic penetration of low carbon technologies) triggers a more energy secure Europe in the SET scenario.

A key final step currently in progress is an assessment of the heterogeneity of impacts for Italy, Germany and Poland as key representative countries. From a social perspective, it is important to adapt the implementation of low-carbon energy transition in line with EU member states' different economic, social and development styles, levels and paths. This is achieved by integrating the values of key macro-economic indicators provided by the IMACLIM model to the CGE-FEU.

The CGE-FEU macro-model has been adapted for the MILESECURE-2050 project by making consistent modules representing CO₂ emissions in combination with prices of allowances for emissions and mitigation projects, meso impact, and macro-economic dynamics. For each representative country, the model is then able to forecast changes in highly energy-intensive activities. It calculates the expected demand for fuel and final energy that depends on the dynamics of economic sectors activity and productivity changes.

Particular attention will be paid to the analysis of the macro-economic growth rate of each country by 2030; supply structure of fuels and energy; final energy demand broken down into fuel, electricity and heat; energy costs paid by households; energy costs of production and services supplied by energy-intensive industries; local labour markets threatened by 'carbon leakage'.

Manifesto Publication in WP5

The final phase of the MILESECURE-2050 project will produce a clear statement on how governance can accommodate transitions to a low-carbon and secure energy system. As such transitions are all-encompassing and pervasive, and as carbon reduction and energy security are themselves highly heterogeneous and multifaceted values, such transitions are complex processes. This complexity is reflected in the MILESECURE-2050 project consortium's composition of from a wide range of disciplines that each solves part of the puzzle of energy transitions. Similarly, it is impossible for one single style of governance to

TRANSITION & SECURITY TOWARDS 2050

The seminar will be devoted to discuss the final results of the MILESECURE-2050 project and will focus on the three key issues:

- Multidimensional Knowledge
- Innovative Models
- Effective Policies

For each one of these themes a paper highlighting the results of the project will be presented and a dedicated working session will be organised to discuss the results. After the working session a Roundtable will discuss the results of the project with European experts and policy makers.

Energy related events

13-15 October 2015

OPEN DAYS 2015

13th European Week of

Regions and Cities

Brussels, Belgium

In the frame of the 13th European week of regions and cities (**Open Days 2015**), MILESECURE-2050 Project Officer Domenico Rossetti di Valdalbero is chairing the workshop on "Innovative and socio-ecological urban dynamics" on 13 October 2015.

Workshop on "Innovative and socio-ecological urban dynamics"

Organisers: DG RTD - EC

Speakers and chair(s): Mr. Rossetti Domenico (Chair), Mr. Bilbao Iñigo, Mr. Gruening Max, Mr. Hooimejer Pieter, Mrs. Lombardi Patrizia.

The workshop aims to highlight how European cities may become emblematic places for attracting jobs and economic activities, transforming them into "innovation hubs" preserving natural resources and limiting environmental damage for the future generations.

At the core of this transformation, innovation and sustainable urbanization will stimulate "green, blue, white and pink" growth.

accomplish such complex processes. Thus, the challenge facing the manifesto is twofold: knowledge from multiple disciplines has to be brought together, and this knowledge must be manipulated to address a wide range of modes of governance.

Governance is itself a heterogeneous concept. If we understand governance to be the whole of all those decisions that are made on the arrangement of our life world with some form of general legitimacy, then governance includes not only 'classic' sites of politics such as parliaments and cabinets, but also public debate, grass-root initiatives, pressure and lobby groups, tax incentives, etc. The idea behind the concept of governance is that there is neither an orchestrated effort nor a central site in which all political power is concentrated. Rather, problems and issues are addressed in multiple sites, through multiple perspectives, and under the sway of heterogeneous interests.

To avail the knowledge produced in the project consortium for practices of governance, we are currently developing the manifesto. Recursive processes of editing and revision are deployed so as to converge at statements in which as broad as possible a body of knowledge is reflected. As multiple disciplines must be reflected, one of the requirements to the manifesto is that be as void of jargon as possible. This is however at the same time challenging, as much of the knowledge produced is of course closely tied to the jargon of particular disciplines.

In order to corroborate the content of the manifesto and the related policy recommendations, we have solicited experts, both from academia and from policy circles and other professionally involved groups, to reflect upon the preliminary content of the manifesto.

WP6 Events

MILESECURE-2050 International Seminar and Regional Workshop, Rome, 17-18 February 2015

In order to face the challenges of climate change and energy security, Europe needs to re-discuss and renew its ways of producing and consuming energy. Reduced emissions, increased use of renewable energy and energy saving are the key environmental objectives that Europe has embedded in its strategy for 2020 and beyond. However, to launch a process of energy transition we need to take the multidimensional nature of this phenomenon into account. Changing energy systems has social, cultural, economic, political, geopolitical, and lifestyle implications and thus energy transition is not confined to the study of technical change, since it also involves deep social change. It is in this context that we talk of the passage towards a low-carbon society, and is this framework an [International seminar and a Regional Workshop](#) have been organized in Rome respectively on 17-18 February and on 19 February 2015.



Both initiatives were devoted to the intermediate results of the MILESECURE-2050 project.

These would allow us to move towards resource-efficient and more livable cities enjoying technological, social, marketing and organizational innovations.

The purpose of this workshop is to exploit the most recent EU research and innovation initiatives sponsored by the EU Framework Programme.

In 2015, a total of about 400 Cohesion Policy programmes and more than 100 programmes financed in the field of rural development and fisheries policy, worth about EUR 500 billion, will be decided and running. The reformed cohesion policy will make available up to EUR 351,8 billion to invest in Europe's regions, cities and the real economy.

It will be the EU's principle investment tool for delivering the Europe 2020 goals: creating growth and jobs, tackling climate change and energy dependence, reducing poverty and social exclusion. This will be helped through targeting the European Regional Development Fund at key priorities such as support for small and medium-sized enterprises where the objective is to double support from EUR 70 to 140 billion over the 7 years.

Thematic concentration, increased efficiency, result-orientation and a stronger link to economic governance and the European Semester process will guide these new programmes, which will be financed by the European Structural and Investment Funds in the period until 2020.

The **Open Days 2015** is a perfect forum for national and regional managing authorities, final beneficiaries and EU institutions to exchange information and facilitate networking on novel approaches for implementing the funds.

There are two types of working sessions:

a) 'workshops', which refer to

The seminar focused on two key issues of MILESECURE-2050: understanding the role of the human factor in the process of energy transition, and studying the relationship between transition and energy security. 20 experts from different European countries attended the seminar, which was of great interest to the scientific community, energy field experts, policy makers and representatives from civil society. The seminar was composed by an Opening Session followed by two separate thematic sessions. About 100 people attended.

The First Session was devoted to the role of the human factor in the energy transition, presenting the results from the first part of the project. These results are based on a broad set of research actions, such as the study of the main trends and policies related to the international and European context; the analysis of more than 90 local anticipatory experiences of low carbon society; and the realization of expert interviews and focus groups. One of the results of the research was to illuminate a rise of the human factor that, in the transition context, tends to assume a leading role in changing energy systems.

The Second Session was focused on the discussion of energy models and scenarios to 2050 that the project is developing and which will be completed at the end of 2015. One of the challenges for MILESECURE-2050 is to produce tools to forecast the conditions under which it is possible to combine transition toward a low-carbon society with energy security. A distinctive features of the models developed in MILESECURE-2050 draws scenarios based on facts such as those evidenced by anticipatory experiences, rather than based only on assumptions arising from current trends.



The **Regional workshop** was a round table on „The challenges of a low- carbon and secure energy transition: from local to global”, organized as a multi-stakeholder dialogue and discussed the MILESECURE-2050 results (see above) as illustrations of ways in which they can contribute to an improved management of energy systems. The discussion offered suggestions on how to address the last phase of the project to effectively influence national and local energy policies.

MILESECURE-2050 Regional Workshop, Warsaw 26 June 2015

MILESECURE-2050 Regional Workshop was organized as a part of the XI International Conference NEUF 2015 (New Energy User Friendly) on the 26th of June 2015 in Warsaw, Poland (Ministry of Economy, Sala pod Kopula conference room). NEUF 2015 Conference entitled: „Transformation of the Polish economy through energy and industry sectors – efficiency, productivity and social dialogue” has been organized under content patronage of Public Board for Sustainable Development of the Energy Sector.

The objective of NEUF 2015 conference was to discuss solutions for the effective transformation of the Polish economy leading to improved energy efficiency, increased generation, transmission and distribution capacities, reliability of supplies and, consequently, a higher level of national energy security and greater energy comfort of the end users. Poland is one of the countries which have accepted the huge challenge of transforming their economy from scratch. This is especially important for the energy and

exchange of good practices and training between practitioners, and
b) 'debates', which refer to the discussion of specific topics, involving a group of experts.

With the headline of "Europe's regions and cities: partners for investment and growth" the **Open Days 2015** are structured around three thematic priorities:

'Modernising Europe': The regions in the energy Union and the single digital market

'Regions open for business': SME development, innovation and job creation

'Places and spaces': Urban and rural development; urban-rural integration.

15-16 October 2015

ECO Campus 3 Conference **Paris, France**

The ECO Campus 3 Conference entitled "Commit and Act Together for the Climate" takes place from 15 to 16 October 2015 in Paris.

The Eco-campus 3 conference aims to produce the contribution of higher education to the agenda of the COP21 solutions.

By 2015, the French higher education institutions believe that it is essential to obtain the recognition of universities, schools and large establishment as major players on the climate issue, and the appropriation of the actions proposed by the largest number of stakeholders.

However, even though their missions in teaching and research and their territorial footprint (1/4 of public buildings) means they will have an essential role, the tertiary institutions are not yet sufficiently perceived by public authorities (State, local authorities) and civil society as the major levers of the transformation of society from the perspective of ecological and energy transition.

To improve this perception, higher education can no longer

manufacturing sectors whose stability is considered the top priority. Through political, economic and business measures, the transformation is to support the development of strong enterprises so as to ensure sustainable economic development of the country and greater competitiveness on the single European market. Failure to respond to the above challenges may, among others, threaten energy supply security, while failure to increase competitiveness may hamper the investment project potential.

Experiences of European countries which decided early on to implement thorough reforms of their energy and industry sectors (e.g. the UK, Germany and Norway) indicate that competition mechanisms and innovation are among the most effective drivers of efficiency improvement. Transformation of the economy is a difficult task because its success depends on numerous factors; it should be economically justified and socially acceptable. It should be implemented with particular regard to the interests of the public while respecting the need to meet the requirements resulting from our commitments to the European Union. During the NEUF 2015 conference, the participants of the discussions talked about the results of the development activities implemented to-date in the energy and industry sectors, about the necessary investments and ways to initiate and support them, about the efficient implementation of investment projects, and about technologies supporting development and innovation.



The conference consisted of several sessions; each of them had the form of a panel discussion with the participation of leading Polish and international representatives of the business community, public opinion building institutions and members of parliament.

MILESECURE-2050 Regional Workshop has been organised by the Institute of Power Engineering (Poland). The first part of the workshop consisted of 3 presentations and a welcome speech:

- Effects of energy transition in Europe with reference to MILESECURE-2050
Dr Jacopo Toniolo, Politecnico di Torino, Italy
- Effects of energy transition in the UK - based on project findings
Prof. Erik Bichard, Salford University, UK
- Modelling approach, analyses, verification and validation issues
Dr Zygmunt Parczewski, Institute of Power Engineering; Adam Umer, Energysys, Poland



The second part was moderated by Bartłomiej Derski, the editor of „Wysokie Napięcie”

simply be content with statements or invocations that have proven their ineffectiveness. Higher education must first show the example in order to engage its stakeholders and to play at long last the pivotal role which it has.

3-5 November 2015
[Global Summit on Electronics and Electrical Engineering](#)
Valencia, Spain

Electrical Engineering-2015 will focus on the Design, Development and applications. The summit will offer a distinctive opportunity for engineers, consultants, and professionals all over the world to gather, discuss, and implement the innovative technologies for making human life better and easier.

25-26 November 2015
[International Trade Fair of Energy Efficiency EFE](#)
Cracow, Poland

International Trade Fair of Energy Efficiency EFE is a meeting of experts, which brings the knowledge and the latest technology to increase the energy efficiency in all spheres of life. Trade Fair gives the answer how to implement the strategy Europe 2020. One of its key priorities is to increase energy efficiency by 20% before 2020.

December 2015
[11th International Conference POWER RING 2015](#)
Warsaw, Poland

The conference will consist of several moderated sessions concerning European Energy market between the united Europe and national autonomy. Among the participants there will be numerous high-profile international guests. Each session will start with a keynote speech which will be followed by a discussion panel with the participation of leading representatives of the business sector, public opinion leaders and members of the Polish Parliament.

magazine. It was conducted in a form of a panel discussion on important aspects of energy transition:

- Possibilities of adjusting to changes taking place in the sector
- Social energy transition – utopia or a real vision?
- Social aspects of energy transition in Poland and Europe –strengths, weaknesses, opportunities and threats in the change process
- Energy security in the process of social transition of energy sector
- Models of changing rules and business models in energy sector and its environment
- National and international experience of transition of energy sector - models and experiences
- Sociological dimension of energy transition

The conference has been attended by 249 participants. The internet transmission has been followed online by 7240 viewers. There have been 32 speakers from Poland and 6 from abroad.

During the conference Domenico Rossetti has been [interviewed by Newseria](#).

All presentations and Workshop materials are available at [MILESECURE-2050 website](#).



MILESECURE-2050 Regional Workshop
Salford (UK), 15 September 2015

MILESECURE-2050 [Regional Workshop](#) entitled "[Achieving a Low Carbon Society: a people's energy revolution or a government programme?](#)" was held in Salford on Tuesday 15th September @ the Lowry Arts Centre.



18-19 February 2016
Sustainable Built Environment 2016 (SBE16), Towards Post-Carbon Cities
Turin, Italy

The Conference is organized by Politecnico di Torino and iiSBE Italia, in collaboration with the City of Torino. SBE16 Torino belongs to the [Sustainable Built Environment regional conference series](#), leading towards the world Conference SBE17 Hong Kong. The objective of SBE16 Torino is to present new paradigms in the shift towards post-carbon cities, bringing together diverse experiences and perspectives, exchanged in a friendly workshop with a rigorous scientific approach.

MILESECURE-2050 partners will participate in the SBE16 with the aim of disseminating the main project results and reach out a wide audience.

The Salford workshop drew on European expertise to generate proposals for the manifesto and associated policies to support energy transition. The programme included influential speakers presenting on what policies to support good governance of energy transition would look like, and participants included local energy practitioners, enablers, policy-makers and academics in an energetic and thought-provoking day.

The outline plan for the workshop was split into five sessions:

- 1) presentations from 3 members of the European MILESECURE-2050 team introduced how the research developed the concept of the 'anticipatory community', how the European energy market could be influenced by community action and other policies, and how different forms of governance might influence the impact of community action, or more forceful government intervention.
- 2) 'If I were in charge' – 3 provocateurs delivered 5 minute sessions on their visions for the role of local initiatives in a low carbon future.
- 3) presentations from two academic and policy experts gave an overview of ways in which society can achieve this transition.
- 4) presentations from three people in local projects that have attempted to implement low carbon transition initiatives gave first-hand accounts of their trials and successes.
- 5) group discussions involved workshop participants in assimilating information from the day's programme with their own knowledge and experience, to propose the policies and governance system that would enable the quickest or most effective route to low carbon transition.

The last issue of MILESECURE-2050 e-Newsletter will be out in December 2015. We will provide information about final products and results of the project and reflect on its follow-up activities. To subscribe for the e-Newsletter click [here](#)

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