Deliverable 9.3

Summary of Dissemination Activities

Date: April, 2015

Prepared by: Greenovate! Europe

SWIP – New innovative solutions, components and tools for the integration of wind energy in urban and peri-urban areas

Grant Agreement: 608554

From October 2013 to January 2017

www.swipproject.eu

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Executive Summary

This Deliverable gives an overview of the Dissemination activities that have taken place in the first 18 Months of the SWIP project. A full summary of activities will be produced at the end of the project in Month 44.

By month 4, the project website (Deliverable 9.2) had been established, to act as the main communication tool of the project. Nine presentations of the project have been held in the first period of the project, targeting academia, industry and the general public. Further, information about the project has been disseminated in four publications, targeted towards both professionals and the general public.

By the end of 2015, we are expecting to see SWIP presented at a further four international events, and the first five research publications being produced. More information is presented in the final section of this Deliverable.

1 Introduction

This Deliverable gives an overview of the Dissemination activities that have taken place in the first 18 Months of the SWIP project. A full summary of activities will be produced at the end of the project in Month 44.

In the first period of the project, there have been nine presentations and meetings held with external participants, to inform them about the project. These presentations have been focused on both professionals and the general public – the latter, mostly in Poland, near the sites of the future demonstrations.

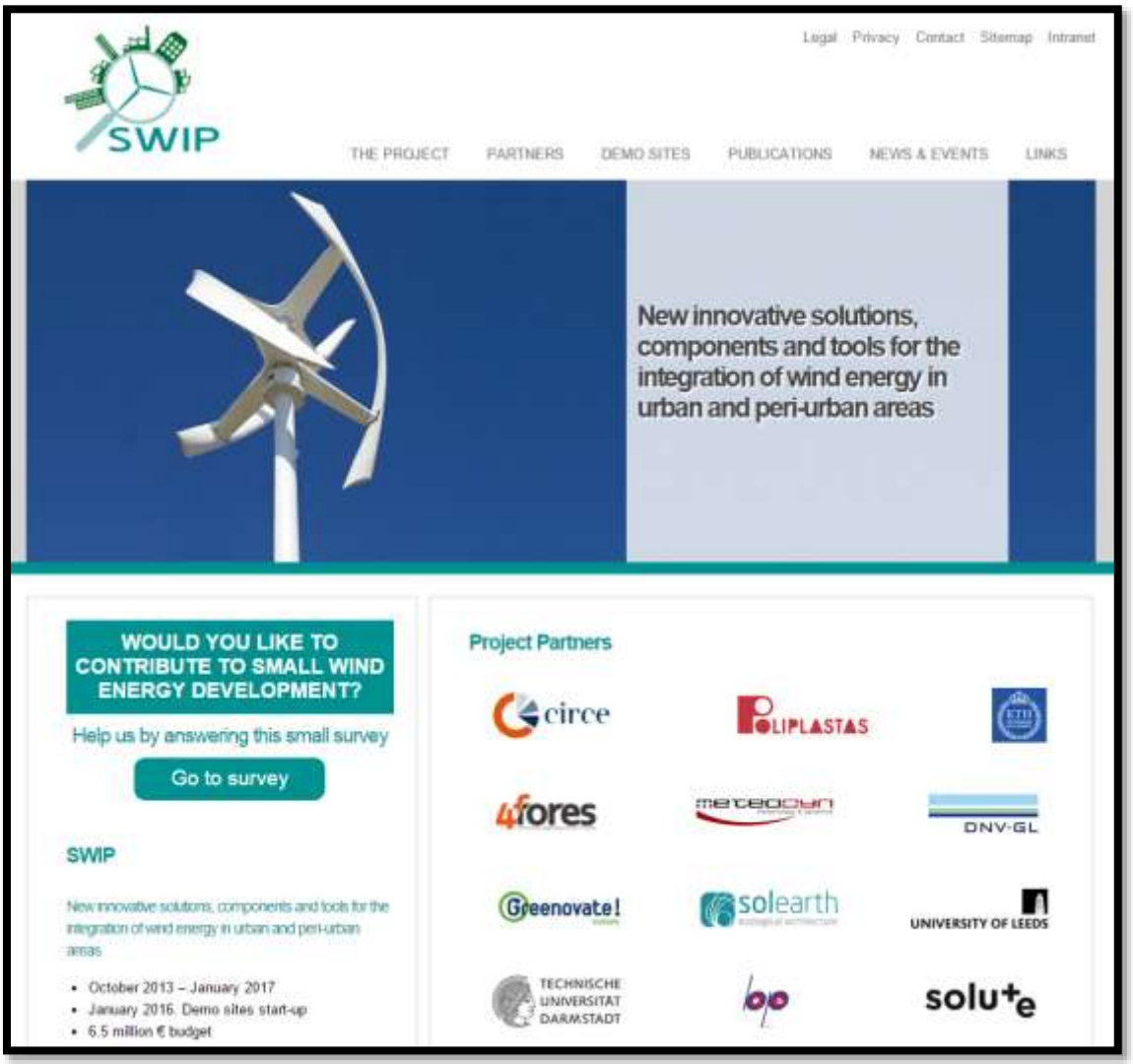
Further, four publications have been produced to spread information about the project to a wider audience. Again, these have targeted both professionals and the general public. Social media has also ben use to spread awareness of the project.

No scientific publications have yet been produced, but this is to be expected in the early stages of a project. The first publications are expected within 2015, and these are listed in the final section of the report.

2 Website

Deliverable 9.2 of the project, the SWIP Website, plays a key role in the dissemination and communication of the project. The website has been periodically updated with news stories on the project and provides access to the SWIP questionnaire developed in Work Package 1.

The website can be found at www.SWIPproject.eu



3 Events and Presentations

3.1 GENERA 2014

SWIP co-ordinator, CIRCE, has presented the SWIP project to an audience of around 50 wind energy professionals at an event named, 'The Paradox of Small Wind', organised as part of the GENERA series of conferences, in Barcelona on 8 May 2014.

The event discussed the current market and development situation for small and medium wind turbines, with researchers and turbine manufacturers. Leo Subias from CIRCE gave the presentation, which covered the project aims, consortium and presented the demonstration sites.

The audience expressed a lot of interest in the developments of the SWIP project, and its aims to reduce costs and improve performance of small wind turbines.

3.2 Presentation of the SWIP Project in Choczewo commune

On 30 May 2014, the SWIP project was presented at a showcase organised by the Polish Ecological Club in Choczewo commune. The SWIP project was presented by Katarzyna Grecka (BAPE), to inform the local inhabitants about the SWIP project and the commune's involvement, as one of the project demonstration sites.

Although Choczewo has a few wind farms, there are no examples of small wind turbines in the area. The presentation was received with interest, with small wind turbines recognised as a potential opportunity for investment into renewable, decentralised, micro-generation. The meeting also provided an opportunity to collect some feedback for a questionnaire which has been prepared for socio-economic evaluation of attitudes to wind turbines.

3.3 Presentation of SWIP given in Stare Pole

The SWIP project has been presented as part of a presentation by project partner the Baltic Energy Conservation Agency (Bałtycka Agencja Poszanowania Energii – BAPE) in Stare Pole, Pomerania, Poland on 30 October 2014.

The event, entitled, 'Environmental protection in agricultural holdings with the use of agri-environmental programs and renewable energy sources', was organized by the Pomeranian Agricultural Advisory Centre and had over 100 participants. The audience was made up of local residents, policy-makers and financial institutions.

Andrzej Szajner from BAPE presented different renewable energy options for agricultural holdings, including small wind turbines and the developments of the SWIP project. Participants at the event also filled in the SWIP questionnaire on awareness of small wind turbines.

3.4 SWIP presented to the Kościerzyna Partnership for Socio-Economic Development

On 20 January 2015, BAPE presented the SWIP project to a workshop of the Kościerzyna partnership for socio-economic development. The aim of the workshop was to discuss the possibility of creating an RES development plan for Kościerzyna County, in the Pomeranian Voivodeship.

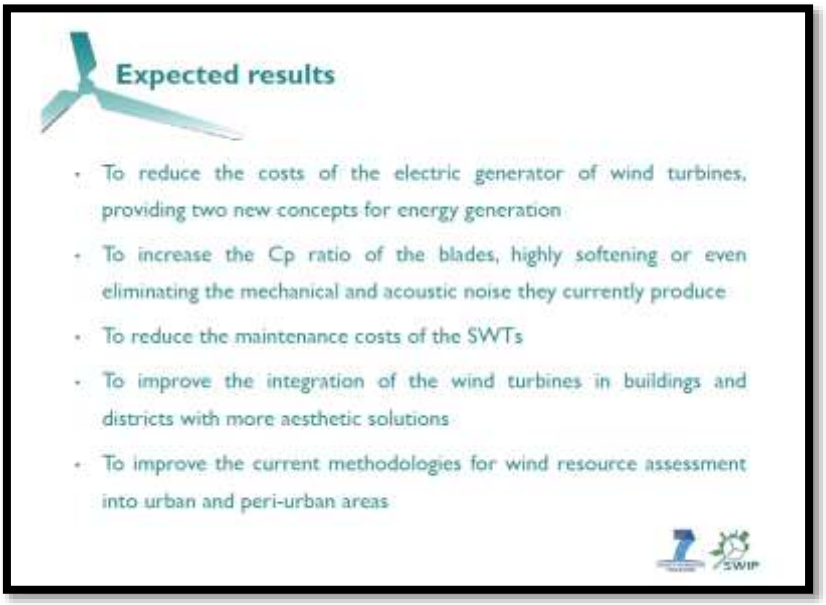
Katarzyna Grecka from BAPE held a lecture called, 'Renewable energy sources in residential and public buildings', on different RES technologies available on the market, including small wind turbines and their potential. Within this context, the SWIP project was presented, including the demonstrations, which are to be held elsewhere in the Voivodeship. The presentation was followed by discussion amongst the members of the partnership. The discussions revealed low awareness in terms of legal framework and requirements for RES, and further meetings in this regard. It was discussed that the lack of RES legislation in Poland is hindering RES development (including both large and small wind energy projects).

A plan for the development of RES in partnership municipalities will be prepared, and will include the development of small RES and incentives that encourage end-users to install small RES technologies, including SWTs.

3.5 CIRCE take part in IEA Task 27 Meetings

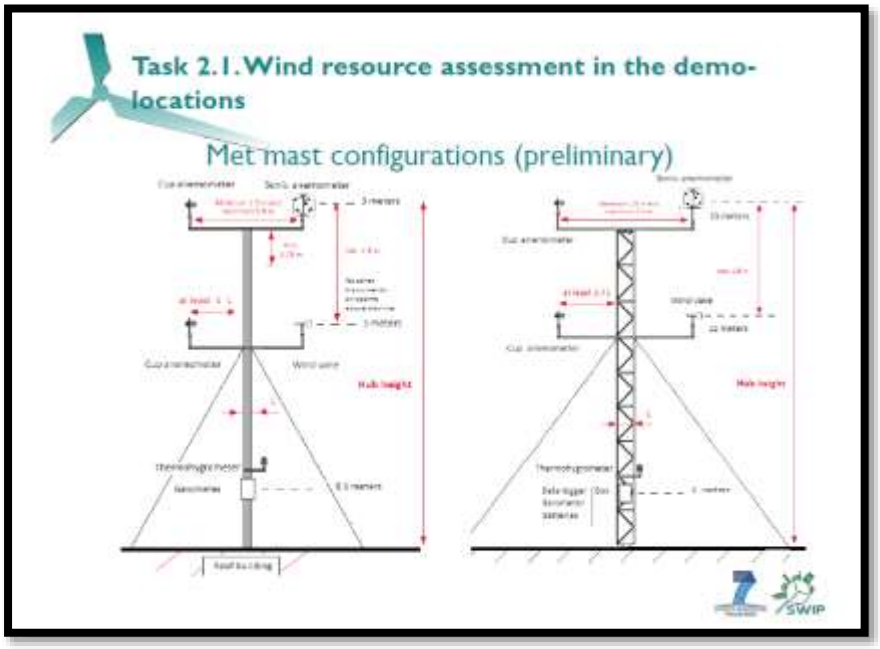
The International Energy Agency's Task 27 is dedicated to Small Wind Turbines in High Turbulence Sites. CIRCE presented the SWIP project to the IEA's seventh meeting on Task 27, via computer desktop sharing, on 12 February 2014.

The event was dedicated to presenting progress on measurements of High Turbulence Sites for Small Wind Turbine applications. These sites were mainly building rooftops. In the presentation, the main objectives of the project, the demo sites, and the expected results of the project were presented. Then, a specific section of the presentation was dedicated to the preliminary methodology prepared for the resource assessment on the demo sites including met mast schemes.



The target audience of the activity was engineers, manufacturers and researchers, and the audience was around 20 people.

CIRCE took part in another meeting of the group on 7 May of the same year. This event was dedicated to measurements on 'High Turbulence Sites for Small Wind Turbine applications, which were mainly building rooftops.



3.6 GENERA 2015

CIRCE presented the SWIP project to an audience of around sixty wind energy professionals at the roundtable event, 'Small Wind Energy Technology: Experiences, Reality and Expectations', in Madrid on 25 February 2015. The roundtable was organised as part of 18th annual GENERA (International Energy and Environment Trade Fair) series of conferences, which is organised by IFEMA, the trade fair of Madrid.

GENERA presents a comprehensive programme of Conferences in which technical and scientific knowledge shared the spotlight with the sector's most recent developments. The event at which SWIP was presented discussed the current market and development of small and medium wind turbines, with researchers and turbine manufacturers. Financing mechanisms, energy auditing, monitoring and management systems, innovation, consumption, and the impact of the regulatory framework were some of the topics that were analysed and discussed by experts and business representatives.

Leo Subias from CIRCE gave the SWIP presentation, which covered the project aims, consortium and presented the demonstration sites. The audience interest was focused on the barriers that the technology currently has and how to overcome them.

3.7 Meteodyn present abstract at CWE 2014

Since 1992 the CWE conference series has represented the world's largest international conference on the application of computing in wind engineering. Meteodyn were present at the 2014

International Symposium on Computational Wind Engineering on 9-12 June 2014, in Hamburg. Around 600 participants from all over the world attended the conference and the accompanying scientific events.

At the event, Meteodyn presented the abstract of a paper, entitled, '*Atmospheric turbulent layer simulation providing unsteady inlet conditions for large eddy simulation*.'

Oral Presentations (Abstracts)

Atmospheric turbulent layer simulation providing unsteady inlet conditions for large eddy simulation

Berthaut-Gerentès, Julien*[1)], Delaunay, Didier[1)], Sanquer, Stéphane[1)]

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1 INTRODUCTION

Inlet conditions for Large Eddy Simulations are of the utmost importance, as it determines a large part of the fluid behaviour within the computational domain. A good way to insure inlet conditions 100% compatibles with CFD requirements (temporal and spatial fluctuations, divergence-free, spectrum...) is to follow an independent precursor simulation method [Tabor]. The idea of these methods is to run a small separate CFD calculation and to store the results before re-introducing them in a second domain as inlet transient conditions. This paper deals with defining an adequate precursor domain, as a short cyclic domain, where the flow is naturally driven by the upper boundary condition, acting as a conveyor belt.

3.8 Presentation of SWIP at Kokoszki Business Park

BAPE presented the SWIP project at a meeting with representatives of companies established in the Kokoszki Business Park, in Gdańsk Kokoszki, on 8 July 2014. The meeting was targeted towards representatives of enterprises from the area, and was organised as part of the Intelligent Energy Europe GoEco project.

In this context, the workshop was focused on energy efficiency and possibilities of implementing renewable energies in the industrial sector and enterprises.

BAPE's presentation presented small wind turbines in urban areas and gave information about the SWIP project and planned actions in the region, including met mast and wind turbine installation, as part of the project demonstrations.

3.9 TCD produce poster for research showcase

During the course of Postgrad Week 2015, the TCD Graduate Students' Union hosted the 'TCD Postgraduate Research Showcase' on Thursday, 12 March 2015, to provide post-graduate students with the opportunity to present their research through a poster design, and to discuss with guests, staff, academics and students.

Around one hundred applications were made for the contest, of which, 20 were chosen for display. Jason Botha's poster on 'Vertical Axis Wind Turbine Noise', was one of the posters to be selected, and provided an opportunity to raise awareness of the project with a wide audience. The event revealed that many people are under-informed about SWTs, and there was broad interest in the SWIP project.

Vertical Axis Wind Turbine Noise

Developing prediction tools to determine noise generated by rotating turbine blades coming into contact with clean air

Jason DM Botha
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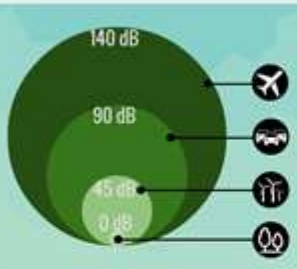
Introduction

Vertical Axis Wind Turbines [VAWT's] are a type of wind turbine used to convert kinetic energy from moving air into electrical power by means of LIFT PRODUCING BLADES. A by-product of this lift production is that aerodynamically generated [AEROACOUSTIC NOISE] is also produced. [1]



TYPICAL NOISE LEVELS

20%

The European Commission aims to achieve 20% Competitive wind power penetration compared to total energy production by 2020.

The FP7 project, SWIP, aims to deal with, and overcome, the main barriers that slow down the large scale deployment of small and medium size wind turbines.

Specifications

rotor radius	1.0 m
span	4.5 m
chord	0.3 m
blade offset	90 °
rated power	2 kW
wind speed	8.4 m/s
rotational speed	17.2 rad/s

SWIP V2

SEE MODEL

As part of the SWIP project, a new Vertical Axis Wind Turbine [the SWIP V2] will be produced.

TCD's Department of Mechanical and Manufacturing Engineering has been tasked with performing acoustic source modelling.

To date there has been NO SUCH CODE DEVELOPED to determine noise from a Vertical Axis Wind Turbine. This research develops a code to do just that!

The SWIP V2 turbine is designed to be installed on the roof of an office building. It will be able to run up to 20 fluorescent office light tubes.

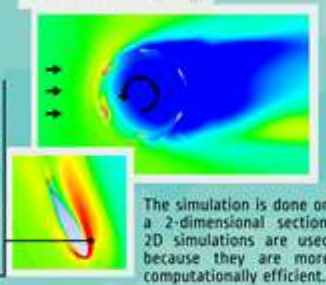
CFD

A Computational Fluid Dynamics [CFD] simulation was run to determine the input parameters to the acoustic solver. The numerical results were exported into a format that the code could read.

Turbulence is a measure of the chaotic motion of flowing air. Turbulent Kinetic Energy [TKE] is the energy contained in this flow.

The motion of upstream blades increases the TKE downstream. [red is higher]

Turbulent Kinetic Energy



The simulation is done on a 2-dimensional section. 2D simulations are used because they are more computationally efficient.

AIRFOIL SELF-NOISE

is due to the INTERACTION between an airfoil blade and the turbulence produced in its own boundary layer and near wake. Two noise generation mechanisms are considered dominant. The models [shown below] use input data derived from the CFD simulation to calculate Sound Pressure Level [SPL]

Airfoil Noise

TURBULENT BOUNDARY LAYER TRAILING-EDGE NOISE [2]
Produced as turbulence passes over the trailing edge.

SPL TBL-TE = f[δ, δ*, u, M, ρ, c, r]
FROM CFD:
δ: boundary layer thickness
δ*: boundary displacement thickness

INFLOW NOISE [3]
Produced by turbulent air contacting the leading edge of the blade.

SPL inflow = f[k, l, u, M, ρ, c, r]
FROM CFD:
k: turbulent kinetic energy
l: length scale

CONSTANTS:

u:	inflow velocity	[m/s]
M:	Mach number	[-]
ρ:	air density	[kg/m^3]
c:	speed of sound	[m/s]
r:	distance to receiver	[m]

Computational Model

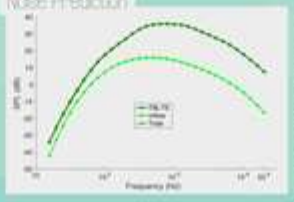
CODE

A quasi-steady approach is used to model the noise generated by the wind turbine. A computational model of the blade is produced by the code and 2D CFD data is interpolated onto the correct position in time and space. The airfoil self noise models are then solved and total noise of the blade is summed.

SPL 47dB

Overall sound prediction for a receiver 10 m away. This is comparable to data from VAWT manufacturers but will be compared to experimental data once the design is produced.

Noise Prediction



It is of interest that TBL noise dominates noise production for the turbine - as literature for conventional wind turbines states otherwise. It is assumed that due to the rotation of the device, the self induced TKE inflow noise becomes less dominant. Future work will investigate this further.

References

[1] R K Amiet. Acoustic radiation from an airfoil in a turbulent stream. Journal of Sound and vibration, 41[4]:407–420, 1975.
[2] Thomas F Brooks, Stuart D Pope, and Michael A Marcolini. Airfoil self-noise and prediction, volume 1218. National Aeronautics and Space Administration, Office of Management, Scientific and Technical Information Division, 1989.
[3] Martin V Lowson. Assessment and prediction of windturbine noise. Technical report, Flow Solutions Ltd., Bristol [United Kingdom], 1993.

This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement number 608554. Project: SWIP

3.10 SWIP presented at International Conference on Advances in Civil, Structural and Mechanical Engineering

Lin Ma from the University of Leeds / University of Sheffield, was invited to deliver a speech to the International Conference on Advances in Civil, Structural and Mechanical Engineering, which was held on 1-2 June, 2014 in London, and was organised by the Institute of Research Engineers and Doctors. Around 100 participants from around 20 countries joined the meeting, and the participants were mainly academics and researchers. The presentation given by Lin was called, 'Small Wind Technology for A Clean Urban Energy Future', and was given to around 30 people. The presentation discussed the small wind energy market, urban wind resources, state of the art small wind turbine technology and the SWIP project.

3.11 Presentation at Leeds Fluid Dynamics CTD Industry Day

The University of Leeds prepared a poster presentation at its Fluid Dynamics CDT Industry Day. Around 50 people from industry and academia attended the meeting. The project framework and the objectives of the SWIP project were presented, focusing on wind turbine aerodynamics and wind resources, modelling and experimental techniques. In addition, the SWIP project and the small wind turbine technology have been presented to our visitors and collaborators from industry, the scientific community and policy maker, as frequently as possible – both nationally and internationally.

4 Publications

4.1 FuturEnergy Publication

The SWIP Project was promoted in the FuturEnergy publication in November 2013. The article was presented in both Spanish and English.

PROYECTO EUROPEO SWIP: ENERGÍA MINIEÓLICA EN LAS CIUDADES

EL CENTRO DE INVESTIGACIÓN DE RECURSOS Y CONSUMOS ENERGÉTICOS (CIRCE) COORDINA EL PROYECTO EUROPEO SWIP, PARA IMPULSAR EL DESARROLLO Y EXPANSIÓN DE LA ENERGÍA MINIEÓLICA EN ENTORNOS URBANOS Y PERIURBANOS. ADEMÁS DE UN NUEVO DISEÑO DE PALAS Y DE COMPONENTES MECÁNICOS, TAMBIÉN SE APORTARÁN NUEVAS SOLUCIONES PARA REDUCIR EL TIEMPO DE RETORNO DE LA INVERSIÓN, MINIMIZAR EL RUIDO Y VIBRACIONES, Y FACILITAR LA INTEGRACIÓN TANTO ESTÉTICA COMO ESTRUCTURAL EN LA EDIFICACIÓN DE LOS AEROGENERADORES, ASÍ COMO GUÍAS DE BUENAS PRÁCTICAS Y RECOMENDACIONES PARA SU ÓPTIMO DESPLIEGUE EN ENTORNOS URBANOS. TRECE ORGANIZACIONES DE TODA EUROPA PARTICIPAN EN ESTA INICIATIVA, QUE CUENTA CON UN PRESUPUESTO GLOBAL DE 6,5 M€.

El Centro de Investigación de Recursos y Consumos Energéticos (CIRCE) de Zaragoza coordina el proyecto europeo SWIP para impulsar el desarrollo y expansión de la energía minieólica en las ciudades.

El objetivo es innovar técnicamente los pequeños aerogeneradores, tanto de eje vertical como horizontal, con un nuevo diseño de palas que reducirá su peso y coste, y con mejoras en los componentes mecánicos, para mitigar los ruidos y vibraciones que generan. Estas innovaciones pueden ser clave para salvar los actuales recelos sociales que están impidiendo un mayor uso de la energía mini-eólica en los entornos urbanos en general. De este modo se conseguirá acercar los puntos de generación eléctrica a los lugares donde se va a consumir, minimizando la necesidad de grandes infraestructuras de distribución, reduciendo su tamaño, complejidad y las pérdidas energéticas asociadas, haciéndolo mediante una fuente renovable.

El proyecto SWIP aportará nuevas soluciones técnicas en el campo de la energía minieólica, para superar las barreras que están frenando su expansión. Este proyecto está coordinado por el Centro de Investigación de Recursos y Consumos Energéticos (CIRCE), y cuenta con un presupuesto global de 6,5 M , de los cuales 4,9 M están financiados por la Comisión Europea a través del 7º Programa Marco.

A mediados de octubre, CIRCE organizó la reunión de lanzamiento del proyecto en Bruselas, en la que participaron 30 investigadores procedentes de las distin¬tas empresas, centros de investigación y otras entidades que forman el consorcio del proyecto SWIP. En total, el consorcio está formado por 13 organizaciones de 10 países distin-

EUROPEAN SWIP PROJECT: SMALL WIND ENERGY IN CITIES

THE ENERGY RESOURCES & CONSUMPTION RESEARCH CENTRE (CIRCE) IS COORDINATING THE EUROPEAN SWIP PROJECT TO DRIVE DEVELOPMENT AND EXPANSION OF SMALL WIND ENERGY IN URBAN AND SUBURBAN SURROUNDINGS. AS WELL AS A NEW DESIGN FOR BLADES AND MECHANICAL COMPONENTS, NEW SOLUTIONS WILL ALSO BE THOUGHT UP TO REDUCE RETURN-ON-INVESTMENT CYCLES, MINIMISE NOISE AND VIBRATIONS, HELP THE AESTHETIC AND STRUCTURAL INTEGRATION OF WIND TURBINES IN THE BUILDING PROCESS, PLUS PRODUCE NEW BEST PRACTICE GUIDES AND RECOMMENDATIONS FOR OPTIMUM ROLL-OUTS IN URBAN ENVIRONMENTS. THIRTEEN ORGANISATIONS AROUND EUROPE ARE TAKING PART IN THIS INITIATIVE, WHICH HAS AN OVERALL BUDGET OF €6.5 MILLION.

Zaragoza University's Energy Resources & Consumption Research Centre (CIRCE in the Spanish acronym) is coordinating a European SWIP project to drive development and expansion of small wind energy in cities.

The aim is to make technical innovations to both vertical and horizontal hub turbines, with a new blade design which will reduce their weight and cost, as well as improvements to the mechanical components, to mitigate the noise and vibrations they produce. These innovations may be vital in reducing the backlash currently prevailing in society which is preventing greater use of small wind energy in urban environments generally. This will contribute to bringing the points where electricity is generated closer to the places where it will be used, minimising the need for large distribution infrastructure, reducing their size, complexity and associated energy losses, and doing so using a renewable energy.

The SWIP project will provide new technical solutions in the field of small wind energy, to overcome the barriers which are impeding its expansion. This project has a Europe-wide budget of 6.5 million, of which 4.9 million are financed by the European Commission's 7th Framework Project.
In mid October, CIRCE had its kick-off meeting in Brussels, attended by 30 researchers from the different companies, research centres and other bodies making up the consortium on the SWIP project. The consortium is composed of 13 organisations from 10 countries: Spain, Lithuania, Sweden,

CIRCE - Centro de Investigación de recursos y consumos energéticos
Research Centre for Energy Resources and Consumption

Construcción Sostenible | Sustainable Construction

FuturEnergy | November/November 2013

www.futurenergyweb.es

4.2 EUREC Project Catalogue

The SWIP project has been promoted in the EUREC (Association of European Renewable Energy Research Centres) 'Renewable Energy Projects Catalogue: A guide to successful and innovative projects in the area of renewable energy.'

6. New innovative solutions, components and tools for the integration of wind energy in urban and peri-urban areas (SWIP)

SWIP

CONTACT DETAILS
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http://fcirce.es

CHALLENGES

The SWIP project aims to deal with and overcome the ***main barriers that slow down the massive deployment of small and medium size wind turbines*** (SWT):

- *Cost of technology:* In Europe, the installed cost of a SWT ranges from 2.100 to 7.400 € / kW and the electricity production costs between 0,15 to 0,30 € / kWh.
- *Wind resource assessment:* Accurate prediction of the wind speed is essential to calculate the electricity output, representing the basis for economic performance.
- *Regulation:* Currently, fully competitive wind markets are rather found in developing countries, where off-grid and micro-grid applications prevail. The sector is at the mercy of regulation, as it is completely dependant of it.
- *Social acceptance and safety:* These two topics should be at the core of future developments, as are the issues that may jeopardize the public awareness, and therefore the success of the technology.
- *Aesthetic, noise and vibration:* Tonality is a feature that may increase the adverse impact of a given noise source, as well as vibrations, due to the impact on the location where the device is installed. Aesthetic issues are key enablers for the social acceptance of these systems.
- *Wind market / user friendliness:* Proximity of society to information and communication technologies needs to be exploited and taken as an advantage for the integration of new systems into society and their day-to-day life.

Main features of the project

The new and innovative solutions developed by the project will allow to: reduce the costs of the electric generator of wind turbines, providing two new concepts for energy generation; increase the power coefficient ratio of the blades (and therefore the number of hours that the SWT is working), highly softening or even eliminating the mechanical and acoustic noise they currently produce; reduce the maintenance costs of the SWTs by including two innovative elements (SCADA for preventive maintenance and magnetic gearbox) in the SWTs and improving the integration of the wind turbines in buildings and districts with more aesthetic solutions.

The project will develop *three different prototypes* to be integrated in three different scenarios (new energy efficient building, shore-line and industrial area) with a view to validating the targeted solutions and goals, providing scalable solutions for different applications.

RESULTS

A technology and policy analysis has been performed with a view to establishing the basis for the development of the wind turbines and their features to allow massive deployment within the existing energy grid. A benchmarking of SWT has been developed in order to set the starting point from where the project can provide improvements beyond state of the art. Energy plans in EU cities have been studied in order to define where the SWT can best fit.

The measurement campaign has started in the pilot areas with a view to defining wind characteristics at the demonstration sites.

Developments in the design of the new blades have been done, taking into account aesthetic aspects for integration in urban environments, as well as performance and noise characteristics.

Integration of small wind energy in urban and peri-urban areas

circe

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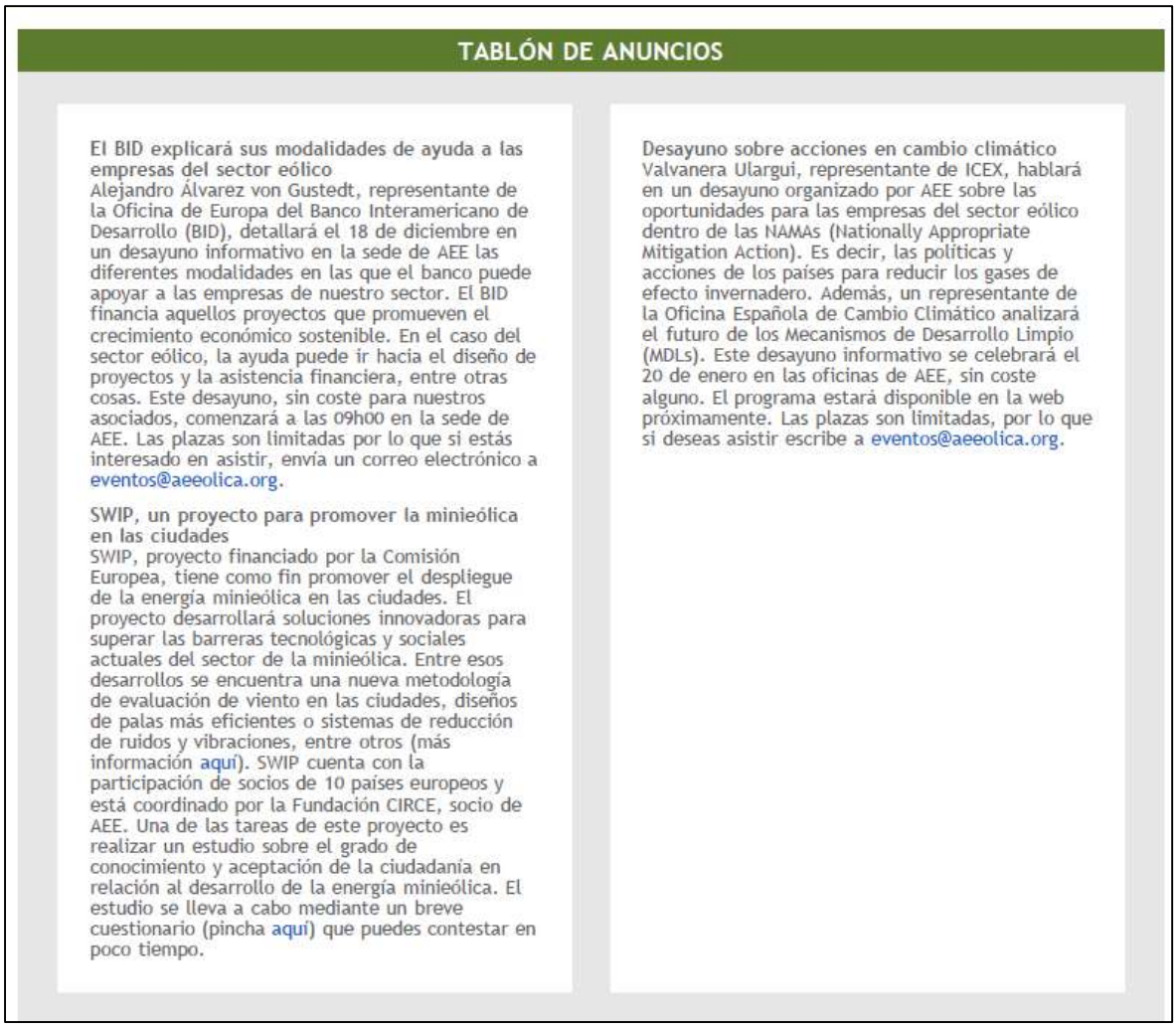
RENEWABLE ELECTRICITY

18 EUREC Renewable Energy Projects Catalogue

EUREC Renewable Energy Projects Catalogue 19

4.3 Daily Bulletin of the Spanish Wind Energy Association

The SWIP project was featured in the Daily Bulletin of the Spanish Wind Energy Association on 5 December 2014.



TABLÓN DE ANUNCIOS

El BID explicará sus modalidades de ayuda a las empresas del sector eólico

Alejandro Álvarez von Gustedt, representante de la Oficina de Europa del Banco Interamericano de Desarrollo (BID), detallará el 18 de diciembre en un desayuno informativo en la sede de AEE las diferentes modalidades en las que el banco puede apoyar a las empresas de nuestro sector. El BID financia aquellos proyectos que promueven el crecimiento económico sostenible. En el caso del sector eólico, la ayuda puede ir hacia el diseño de proyectos y la asistencia financiera, entre otras cosas. Este desayuno, sin coste para nuestros asociados, comenzará a las 09h00 en la sede de AEE. Las plazas son limitadas por lo que si estás interesado en asistir, envía un correo electrónico a eventos@aeeolica.org.

SWIP, un proyecto para promover la minieólica en las ciudades

SWIP, proyecto financiado por la Comisión Europea, tiene como fin promover el despliegue de la energía minieólica en las ciudades. El proyecto desarrollará soluciones innovadoras para superar las barreras tecnológicas y sociales actuales del sector de la minieólica. Entre esos desarrollos se encuentra una nueva metodología de evaluación de viento en las ciudades, diseños de palas más eficientes o sistemas de reducción de ruidos y vibraciones, entre otros (más información aquí). SWIP cuenta con la participación de socios de 10 países europeos y está coordinado por la Fundación CIRCE, socio de AEE. Una de las tareas de este proyecto es realizar un estudio sobre el grado de conocimiento y aceptación de la ciudadanía en relación al desarrollo de la energía minieólica. El estudio se lleva a cabo mediante un breve cuestionario (pincha aquí) que puedes contestar en poco tiempo.

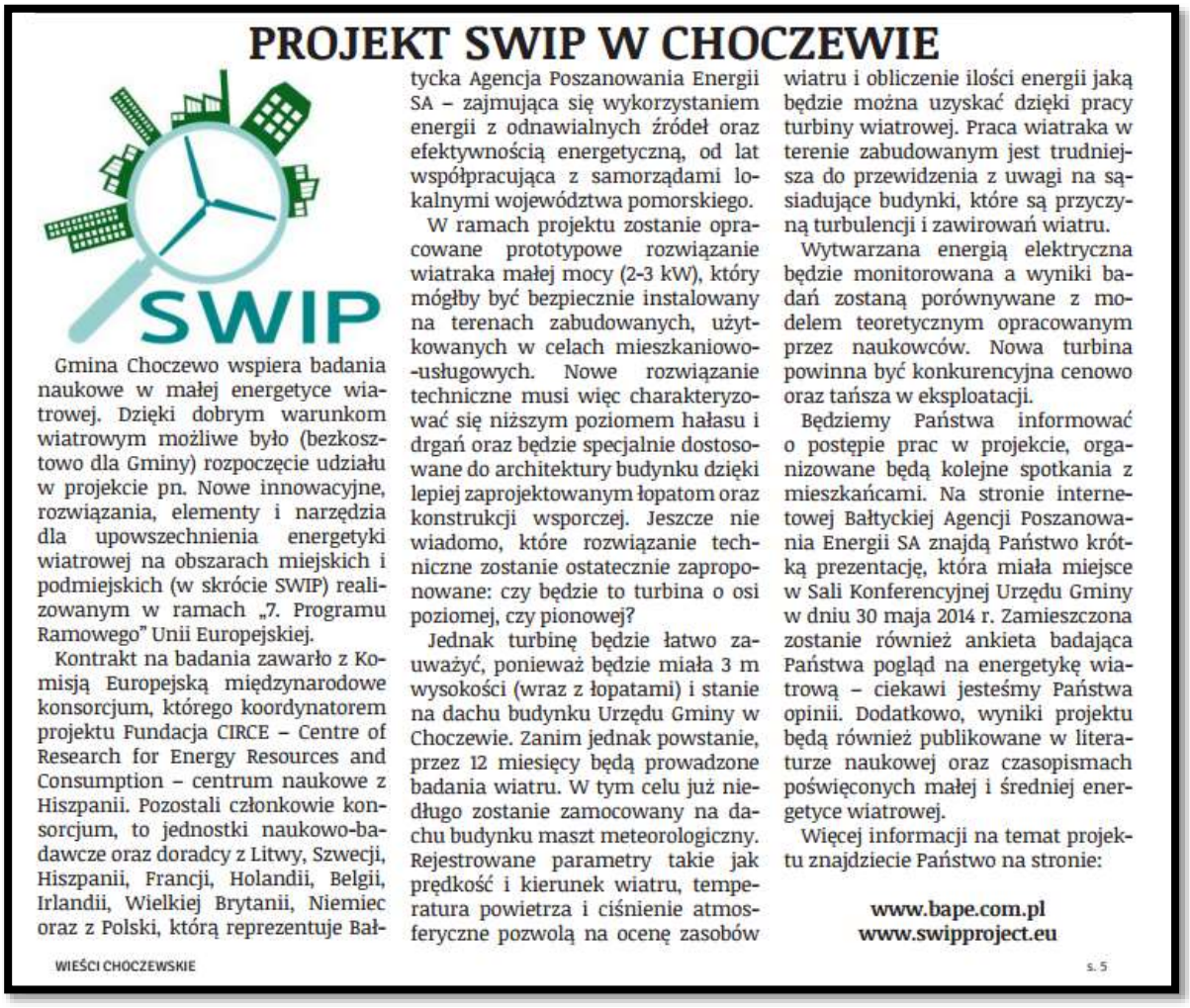
Desayuno sobre acciones en cambio climático

Valvanera Ulargui, representante de ICEX, hablará en un desayuno organizado por AEE sobre las oportunidades para las empresas del sector eólico dentro de las NAMAs (Nationally Appropriate Mitigation Action). Es decir, las políticas y acciones de los países para reducir los gases de efecto invernadero. Además, un representante de la Oficina Española de Cambio Climático analizará el futuro de los Mecanismos de Desarrollo Limpio (MDLs). Este desayuno informativo se celebrará el 20 de enero en las oficinas de AEE, sin coste alguno. El programa estará disponible en la web próximamente. Las plazas son limitadas, por lo que si deseas asistir escribe a eventos@aeeolica.org.

4.4 BAPE promote the SWIP project in Choczewo newsletter

BAPE have produced an article for the monthly newsletter of the Choczewo commune in June 2014, which delivers the most recent news and information on proceedings undertaken in the municipal office but also describes events taking place in the commune.

The article provided some information about the project, as well as informing the region's inhabitants about the met mast and the demonstration wind turbine which are to be installed at a later stage of the project. Further direction was also given for where to find more information about the project.



PROJEKT SWIP W CHOCZEWIE

SWIP

Gmina Choczewo wspiera badania naukowe w małej energetyce wiatrowej. Dzięki dobrym warunkom wiatrowym możliwe było (bezkosztowo dla Gminy) rozpoczęcie udziału w projekcie pn. Nowe innowacyjne, rozwiązania, elementy i narzędzia dla upowszechnienia energetyki wiatrowej na obszarach miejskich i podmiejskich (w skrócie SWIP) realizowanym w ramach „7. Programu Ramowego" Unii Europejskiej.

Kontrakt na badania zawarło z Komisją Europejską międzynarodowe konsorcjum, którego koordynatorem projektu Fundacja CIRCE – Centre of Research for Energy Resources and Consumption – centrum naukowe z Hiszpanii. Pozostali członkowie konsorcjum, to jednostki naukowo-badawcze oraz doradcy z Litwy, Szwecji, Hiszpanii, Francji, Holandii, Belgii, Irlandii, Wielkiej Brytanii, Niemiec oraz z Polski, którą reprezentuje Bałtycka Agencja Poszanowania Energii SA – zajmująca się wykorzystaniem energii z odnawialnych źródeł oraz efektywnością energetyczną, od lat współpracująca z samorządami lokalnymi województwa pomorskiego.

W ramach projektu zostanie opracowane prototypowe rozwiązanie wiatraka małej mocy (2-3 kW), który mógłby być bezpiecznie instalowany na terenach zabudowanych, użytkowanych w celach mieszkaniowo-usługowych. Nowe rozwiązanie techniczne musi więc charakteryzować się niższym poziomem hałasu i drgań oraz będzie specjalnie dostosowane do architektury budynku dzięki lepiej zaprojektowanym łopatom oraz konstrukcji wsporczej. Jeszcze nie wiadomo, które rozwiązanie techniczne zostanie ostatecznie zaproponowane: czy będzie to turbina o osi poziomej, czy pionowej?

Jednak turbinę będzie łatwo zauważyć, ponieważ będzie miała 3 m wysokości (wraz z łopatami) i stanie na dachu budynku Urzędu Gminy w Choczewie. Zanim jednak powstanie, przez 12 miesięcy będą prowadzone badania wiatru. W tym celu już niedługo zostanie zamocowany na dachu budynku maszt meteorologiczny. Rejestrowane parametry takie jak prędkość i kierunek wiatru, temperatura powietrza i ciśnienie atmosferyczne pozwolą na ocenę zasobów wiatru i obliczenie ilości energii jaką będzie można uzyskać dzięki pracy turbiny wiatrowej. Praca wiatraka w terenie zabudowanym jest trudniejsza do przewidzenia z uwagi na sąsiadujące budynki, które są przyczyną turbulencji i zawirowań wiatru.

Wytwarzana energią elektryczna będzie monitorowana a wyniki badań zostaną porównywane z modelem teoretycznym opracowanym przez naukowców. Nowa turbina powinna być konkurencyjna cenowo oraz tańsza w eksploatacji.

Będziemy Państwa informować o postępie prac w projekcie, organizowane będą kolejne spotkania z mieszkańcami. Na stronie internetowej Bałtyckiej Agencji Poszanowania Energii SA znajdą Państwo krótką prezentację, która miała miejsce w Sali Konferencyjnej Urzędu Gminy w dniu 30 maja 2014 r. Zamieszczona zostanie również ankieta badająca Państwa pogląd na energetykę wiatrową – ciekawi jesteśmy Państwa opinii. Dodatkowo, wyniki projektu będą również publikowane w literaturze naukowej oraz czasopismach poświęconych małej i średniej energetyce wiatrowej.

Więcej informacji na temat projektu znajdziecie Państwo na stronie:

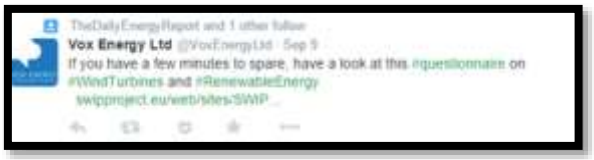
www.bape.com.pl
www.swipproject.eu

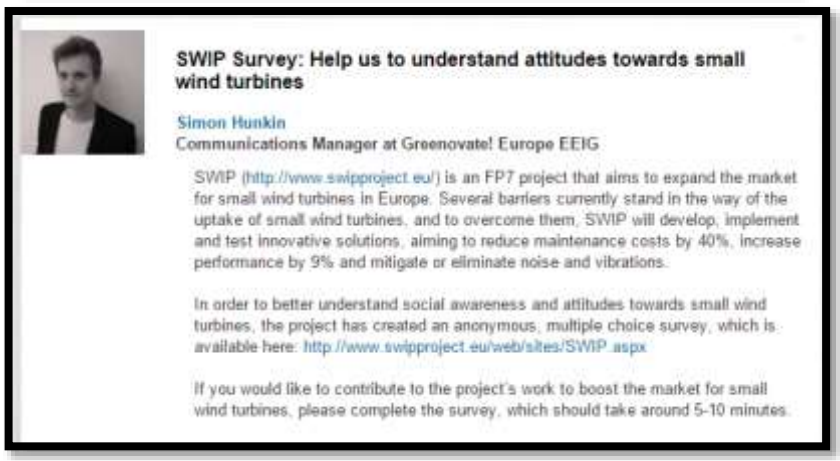
WIEŚCI CHOCZEWSKIE

s. 5

5 Social Media

Although it was decided that the SWIP project would not be create dedicated social media accounts, project partners have been active in promoting SWIP via social media. Primarily, this has been driven by CIRCE and Greenovate! Europe, via LinkedIn and Twitter. Below are a selection of social media interactions. Tweets have been picked up by multipliers, such as REVOLVE media and the Spanish Wind Energy Association.





6 Upcoming Activities

Although this report is an overview of the actions performed so far, several future events are already clear. This section reports briefly on some expected activities. A full report on these activities will be given in Deliverable 9.4, the Final Report on Dissemination Activities, at the end of the SWIP project.

6.1 TCD at EuroNoise 2015

TCD has developed a paper which they will be presenting at EuroNoise 2015 (10th European Congress and Exposition on Noise Control Engineering), in Maastricht from 31 May - 3 June. The conference, which is organised by the European Acoustics Association, will gather acousticians and noise experts from all over the Europe for the event on noise control and soundscape in Europe. The SWIP paper to be presented is called, 'A novel method of vertical axis wind turbine noise prediction', and has been written by Jason Botha and Henry Rice.

6.2 Meteodyn Presentations

Meteodyn is preparing three talks on SWIP results to take place in 2015. These are:

- 'Considering thermal stratification in CFD modelling for wind resource assessment', to be given at the 3rd International Conference on Energy & Meteorology (ICEM 2015), in Boulder, Colorado, USA. This is planned for June 2015;
- 'ACH assessment with CFD tool in complex urban area', to be given at the 36th Air Infiltration and Ventilation Centre Conference (AIVC 2015) in Madrid, Spain, in September 2015.
- 'Wind assessment in urban areas with CFD tools: Application to natural ventilation potential and outdoor pedestrian comfort', to be given at the 14th International Conference of the International Building Performance Simulation Association (BS2015) in Hyderabad, India. This activity is planned for December 2015;

6.3 University of Sheffield Papers

The University of Leeds/Sheffield team is expecting to produce four research publications making use of SWIP results. These are:

- 'Atmospheric boundary layer flow simulation associated with urban environment' – September 2015 (with Meteodyn)
- 'Impact of blade surface contaminations on the performance of small wind turbines' – October 2015;
- 'Large Eddy Simulation around buildings' – December 2015
- 'Flow around the tip of small wind turbine blade' – January 2016