



**SEVENTH FRAMEWORK PROGRAMME
THEME 4
FP7-2010-NMP-ENV-ENERGY-ICT-EeB**



Project no.: 260086

Deliverable Report

Submission Date: June 2011

D8.1 - Publishable project materials, web site, presentations, leaflets and articles

Prepared by:
Fraunhofer

Project co-funded by the European Commission within the Seventh Framework Programme		
Dissemination level		
PU	Public	X
PP	Restricted to other programme participants (including Commission Services)	
RE	Restricted to a group specific by the consortium (including Commission Services)	
CO	Confidential, only for members of the consortium (including Commission Services)	

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1 Executive Summary

Deliverable 8.1 “Publishable project materials, web site, presentations, leaflets and articles” is a deliverable of Workpackage 8 “Dissemination and Exploitation”. It is delivered from the Task 8.3 (Technology Transfer and Dissemination), which aims basically the dissemination of the project results. In order to be able to successfully disseminate the project and project results, many actions have been taken in the first 12 months of the project. In this deliverable, the activities performed in this area by the project partners are summarized under four points as given below:

1. Preparation of the project web-site
2. Creation of NANOINSULATE’s project identity: Preparation of • Project logo, • Templates for periodic reports, deliverables and also for project presentations
3. Preparation of publishable project materials (e.g. leaflets, dissemination activities at fairs, publishable project information at EU)
4. Organisation of seminars and participation to conferences by the project partners

The outcome of these activities will support the preparation of dissemination and exploitation plan of the project throughout the project.

2 Terms of Reference

Deliverable is linked with Task 3 focusing on technology transfer and dissemination activities of the DEP including:

- Promotion and dissemination through a project web site
- Creation of the NanoInsulate project's identity – the logo, templates for reports and generic presentations for project promotion
- Preparation and dissemination of materials through traditional dissemination routes: publications, articles, technical papers for scientific journals, presentations at suitable events/conferences
- Non-confidential results, focusing on fundamental scientific breakthroughs, will be disseminated around the project's mid-term point, subject to the approval of all beneficiaries
- Targeted dissemination campaigns to identified companies/building associations, end-users, supply chain partners or licensees, stakeholders, political decision makers and lobbyists. The project will seek to engage early and strengthen existing links with the European Construction Technology Platform (ECTP); Acciona is a founding member of this and will help to ensure information, results *etc.* are fully disseminated
- Provision and availability of education materials, consultancy and support to potential end-users who may wish to take up the developed concepts/technologies

Publication of final results, focusing on wide take up of the solutions developed *via* press releases and articles, targeted dissemination campaigns and attendance and presentations at EU trade shows.

3 Project Web-Site

The NANOINSULATE Project web-site has been prepared by PERA. The beta link to the project website is currently ready and sits on the programmers test server. Here is the link:

<http://www.nanoinsulate.eu>

The project web-site will support the dissemination of the project, publishable project results. Potential end-users who may wish to take up developed concepts and technologies will be able to contact the related partners through the project web-site. The homepage of the project web-site is shown in Figure 1.

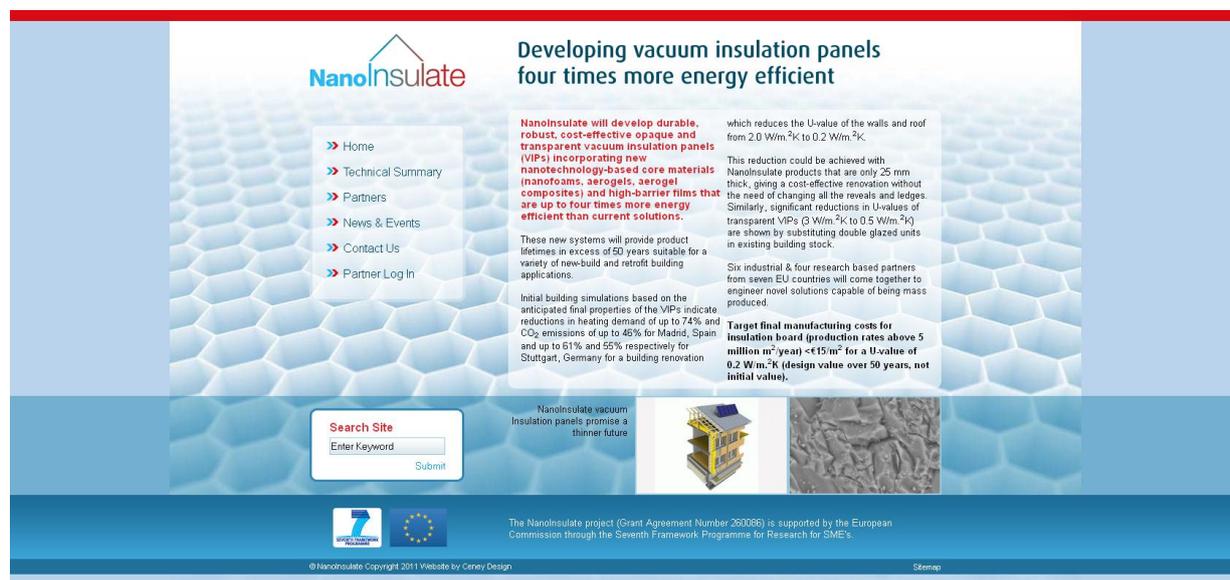


Figure 1. Project web-site of NANOINSULATE Project (shown here “Home” from the beta link)

The project web-site will be a communication platform between the project partners. There will be the area, which will be accessed only by the project partners (under Partner Login). It will be possible for the project partners to access the project reports and deliverables anytime they want.

4 Creation of Project's Identity

- **Project logo:**

One important issue is the creation of project's identity. The project logo is selected among several designs. Fraunhofer-ISE and KINGSPAN put a lot of effort on the creation of the concept for the project logo. After several attempts, a final decision had been given. The initial ideas / concepts for the project logo are given in Table 1. Table 2 shows the logos created in the second round of the elections. The final selected project logo can be seen in Table 2 with the maximum number of votes.

Table.1. Project logos (first concepts/ideas)

#	Logo	Approvals	Votes
1		O. Miesbauer, M. Gaddes, C. Stramm	3
2			
3		O. Miesbauer	1
4		O. Miesbauer	1
5			
6		M. Gaddes, A. Pargeter [†] , M. Rochefort, C. Delgado, A. Gálvez Moreno R. Caps, M. Pullinger	7
7		M. Gaddes, A. Eisenhardt, C. Delgado	3

[†] Would prefer all one case

Table.2. Project logos (Second round. The selected logo is the 5th one)

#	Logo	Approvals	Votes
1			
2			
3	 		
4		E. Küçükpınar, M. Rochefort	2
5		A. G. Moreno, E. Küçükpınar, C. Delgado, M. Rochefort, O. Miesbauer	5

- **Templates for reports and presentations:**

The report and presentation templates have been prepared in the first 12 month of the project. The partners have already prepared the 6th month, and 9th month reports using these templates.

5 Publishable Project Materials

- Leaflets:

A flyer about “Vacuum Insulation Panels” had been prepared both in English and in German (Figure 2) for the dissemination of activities in the area of Vacuum Insulation Panels. The flyer has been prepared by Fraunhofer-IVV and can be modified / updated throughout the project based on the results obtained after agreed by all the project partners.



Vacuum Insulation Panels (VIPs)

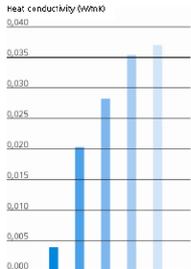
In Germany, the heating of buildings represents about a quarter of total energy consumption. Better heat insulation of building envelopes would save a considerable quantity of fossil fuel generated energy and would significantly reduce carbon dioxide emissions. Legislators have taken this into account in the new German Energy Saving Regulation which imposes strict low-energy standards for new buildings. Against this background, scientists at the Fraunhofer Institute for Process Engineering and Packaging IVV are developing barrier films for vacuum insulation panels (VIPs), namely insulation materials of the future. These panels provide excellent heat insulation at very low thickness. Potential areas of application include heat insulation in old and new buildings, and in refrigerating equipment where VIPs allow maximization of the useable volume and reduce energy consumption.

Challenge

The heat conductivity of an insulating material is largely determined by the heat conduction of the enclosed gas. However, VIPs are evacuated, meaning that gas convection is eliminated and the heat conductivity markedly falls. In order to make a vacuum insulation panel, boards made of a porous low density filler material are packed, sealed and evacuated. In a high barrier film that is highly impermeable to gases.



Image source: va-Q-tec



Material	Heat conductivity (W/mK)
VIP at 0.1 mbar	~0.005
Fumed silica	~0.020
polyurethane foam	~0.028
glass fiber	~0.035
standard EPS	~0.038

From left to right: VIP at 0.1 mbar, fumed silica, polyurethane foam, glass fiber, standard EPS

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Vacuum Insulation Panels (VIPs)

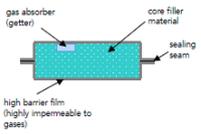
Currently, pressed fumed silica is generally being used as the core filler material. Besides this, other materials such as nano-foams and aerogels are also being tested as filler materials. Gas absorbers (getters) additionally incorporated into the panels are able to remove the residual gas. The preservation of the vacuum is reliant on the barrier film and the sealing seam being impermeable to air and water vapor. And this is where the expertise of Fraunhofer IVV scientists is required. High barrier film materials must be developed which are able to maintain their barrier effect against water vapor and oxygen for at least 30 years. A further task of the Fraunhofer IVV is to significantly improve the accuracy of measurement of the barrier effect and to develop an analytical technique for quantifying film and sealing seam permeability. This analytical technique will be used for quality assurance and for monitoring longterm storage stability.

Project execution

The Fraunhofer IVV has combined forces with industrial partners and research organizations from five EU countries, Israel, and Turkey to undertake an EU funded project. The objective is to develop a vacuum insulation panel through to market readiness and to demonstrate its functionality on example buildings. The partners are jointly designing the panels and improving the barrier properties. The task of the Fraunhofer IVV scientists is to optimize the coating process parameters in order to achieve the desired barrier effects and the desired mechanical and optical properties. Inorganic barrier layers deposited via vacuum vapor deposition are protected by intermediate organic layers. These are applied by either coating or laminating. For optimizing the process, cost-benefit considerations play an important role. The aim of this research is to reduce the number of layers in the film systems, yet still achieve a satisfactory barrier effect.

Expertise of the Fraunhofer IVV

The Fraunhofer IVV possesses many years of experience carrying out applied R&D projects in collaboration with national and international partners. A modern laminating and coating plant is available for experiments in our pilot plant. Our laboratories have all necessary equipment for testing the barrier effect to water vapor and oxygen, and for evaluating sealing processes and the mechanical stability. This measurement data allows us to make initial estimates of the service life of the panels and allows us to compare system components and variants.



Labels: gas absorber (getter), core filler material, sealing seam, high barrier film (highly impermeable to gases)



Film feed and application system at the Fraunhofer IVV

Figure 1. Flyer prepared by Fraunhofer-IVV

- **Participation to Fairs:**

- **K-Messe 2010 in Köln, Germany:** Fraunhofer-IVV attended this fair. It is the largest plastics fair in Europe. At this fair, at the Fraunhofer stand, the activities in the area of high barrier material development for VIPs had been disseminated.
- **Bau Messe 2011 in München, Germany:** It is one of the largest international building fairs in Europe. Both Va-Q-Tec and Fraunhofer-IVV had a stand at the fair. Va-Q-Tec presented their latest VIP products. The importance of VIP technology in the building industry had been exhibited through the fair. Figures below show the Fraunhofer-IVV stand at Bau-Messe 2011 in München.



Figure 2. FRAUNHOFER Stand at Bau-Messe 2011 in Munich

- **Other activities:**

Project information has been submitted to the E2B Project Review 2011. The Review will showcase current funded EeB PPP projects. The publication will be issue 1 of a biennial publication providing an overview and update of progress on EeB projects.

6 Conferences / Scientific Publications

- Exploitation Strategy Seminar:

An exploitation strategy seminar was attended by the majority of partners on 17th December 2010 in Milan. The seminar was facilitated by Mauro Caocci of Cimatec, who is an independent expert appointed by the European Commission to provide this service to projects funded under the FP7 Nanotechnology theme. The main output of this seminar was a synthesis report, summarising the main risks to the project and its exploitable results, and the partners' plans for those results. This report will then be used to prepare the NANOINSULATE dissemination and exploitation plan.

- Participation to Conferences:

I. Symposium: ““Application of Vacuum Insulation in the Building Industry“, 17th of March, 2011, Berlin”

A symposium was organised on 17th of March, 2011 in Berlin, Germany by “Bundesinstitut für bau-, Stadt- und Raumforschung (The Federal Institute for Research on Building, Urban Affairs and Spatial Development)“.

Original Symposium title: “Anwendung der Vakuumdämmung im Bauwesen“, in English: “Application of Vacuum Insulation in the Building Industry“, 17th of March, 2011, Berlin

R. Caps (Va-Q-Tec) and K. Noller (Fraunhofer-IVV) had made presentations at this symposium.

1. Article title: “Zum Stand der Entwicklung von Hochbarriere- und Ultrabarrierefolien für Vakuumisolationspaneele“, in English: “Novel High Barrier Laminates for VIP Applications“, by Klaus Noller, Esra Kucukpinar, Fraunhofer Institute for Process Engineering and Packaging.

Presentation by K. Noller

2. Article title: “Entwicklung, Qualitätssicherung und Anwendung von VIPs in der Baupraxis“, in English: „Development, Quality control, Application of VIPs in the Building Industry“ by Roland Caps, va-Q-tec and D. Bindel, Bindel-Isolierungen GmbH.

Presentation by Roland Caps

II. Symposium: “Sustainable Energy Week “, 11-15th of April, 2011

European Union organized on 11th-15th of April, 2011 the “Sustainable Energy Week”. On April 13th, E2B and DG RTD/G and DG INFSO organized the event titled “Energy Efficient Buildings PPP: Long term roadmap, synergies and potential in addressing societal challenges” in Brussels. Jose Cúbillo from Acciona was invited to prepare a presentation called “Advanced Materials for energy efficiency in buildings”. In that presentation all the projects regarding that topic were exposed and NANOINSULATE Project was one of them.