

Brussels, 16 January 2012

Resource efficiency: An economic necessity while remaining societal challenge (Commission Roadmap / SEC (2011) 1067 final)

EXECUTIVE SUMMARY

The European engineering industries represented by Orgalime share the concerns and objectives of the Commission's Resource Efficiency Roadmap:

- We are particularly committed to the **constant environmental improvement of our own production processes and products**. "Creating more with less" or "delivering greater value with less input" immediately reduces production costs, increases profitability and the competitiveness of our industry, where almost 50% of costs relate to material and resource consumption. Resource efficiency therefore represents **an indispensable economic necessity for Orgalime industries**.
- Orgalime also agrees that **energy efficiency represents a priority topic** not only in the context of the EU's energy and climate change policy but also for the EU's Resource Efficiency policy. The Eco Design Directive and its ongoing implementation on some 35 different product groups of our industries, particularly on energy or water consumption in the use phase, is therefore a milestone in contributing to resource efficiency.
- In addition to constantly improving own processes and products, our industries take further resource efficiency actions, including the conclusion of long term supply contracts, constant investments into research and innovation, substitution of critical raw materials where possible, forming joint ventures or pursuing vertical integration. Our industries provide **ever more energy efficient products** to (private and professional) consumers, which at the end of life stage are collected, treated and recycled according to the Waste Electrical and Electronic Equipment Directive (WEEE), with some 10 million tons of WEEE arising in the EU in 2010.
- Our manufacturing activities require many (strategic) raw materials and resources, such as energy, chemicals, ferrous and non-ferrous metals, minerals, plastics and rare earths. **Sourcing of raw materials is an increasing challenge** as Europe is highly import dependent in certain areas, supply of important primary raw materials (i.e.: rare earths, metals, minerals) is often concentrated in the hand of few companies in few (often also instable) countries. European engineering industries are exposed to price speculations and reduced availability of resources.
- At the same time, our industries are the **key enabling industries** that offer a wide disparity of sustainable products and technology solutions to all other industry sectors (e.g.: high tech monitoring, control or process automation or ICT equipment, to name but a few) and to consumers to implement resource efficiency in practice. The challenge remains to **convince and make the market respond** to these products.
- **Several important pillars of resource efficiency of products are already substantially legislated for our sector** (i.e.: energy consumption of products in the use phase, restrictions of and information on substance use in products or their end of life management): Our industry is therefore concerned that possible further measures on resource efficiency would undermine the substantial investments made by our industry in implementing existing legislation. This is particularly the case for the more than 35 implementation measures (adopted or underway) under the existing Eco Design of Energy Related Products Directive that target our sector, or the (recast) WEEE and RoHS Directives, further EU waste acquis, the REACH Regulation and major energy

Orgalime, the European Engineering Industries Association, speaks for 34 trade federations representing some 130,000 companies in the mechanical, electrical, electronic, metalworking & metal articles industries of 22 European countries. The industry employs some 9.7 million people in the EU and in 2010 accounted for some €1,510 billion of annual output. The industry not only represents some 28% of the output of manufactured products but also a third of the manufactured exports of the European Union.

policy initiatives, notably the Energy Performance of Buildings Directive (EPBD), the Energy Labeling Directive or the just tabled proposal for an Energy Efficiency Directive.

Against this background, **Orgalime calls for an EU Resource Efficiency Policy that:**

- Ensures **easy, continuous and affordable access to international raw material markets for European (engineering) industries**, especially through the **removal of trade barriers** and the **promotion of free trade** of raw materials at an international level
- Improves the framework conditions for a **European secondary raw materials market**
- **Stops illegal exports of valuable waste fractions** outside Europe through **stricter enforcement** of EU waste (shipment) legislation
- Promotes **market driven innovation into new recycling technologies**
- Promotes **market response for sustainable products and technologies to realise resource efficiency gains** throughout the society, from private households to professional users, the different industry branches and the services sector
- Promotes **research and innovation** in resource efficiency
- **Supports industry driven activities** on resource efficiency and companies' own resource efficiency projects
- Ensures sufficient **funding and support measures**
- Conducts thorough and representative **impact assessments prior to any legislation**
- **Fully applies all criteria and procedural elements of the Eco Design Directive when considering the use of this Directive for legislating on further resource efficiency parameters than energy efficiency**
- Continues working on a **common knowledge base** on the matter both, at EU and international level

We support the following proposals of the Resource Efficiency Roadmap:

- Improving the dialogue and consensus with partner countries at international level
- Supporting research and innovation with clear framework conditions, better access to finance for companies, promoting innovation partnerships and PPPs and focusing EU research funding (EU Horizon 2020) on key resource efficiency objectives, including sustainable energy or substitution of rare materials
- Ensuring full implementation and enforcement of the EU's waste acquis
- Turning waste into a resource in a "circular economy", especially via recycling
- Establishing a Zero-landfill policy
- Stimulating the secondary materials market, however, without imposing or prescribing recycling technologies – market forces should remain the driver for innovation
- Implementing the Water Framework River Basin Management Plans
- Developing meaningful European resource efficiency indicators
- Launching a "EU Resource Efficiency Transition Platform" to involve stakeholders, including our industry and launching a "Resource Efficiency Finance Round Table"

However:

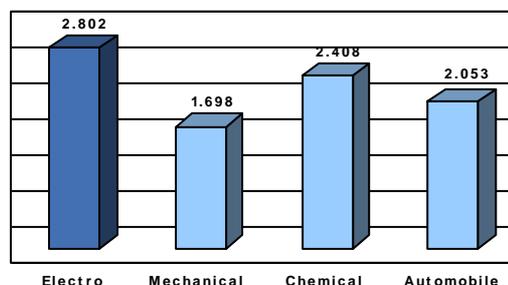
- **We do not support** the proposal to introduce **minimum recycled material rates, durability and reusability criteria, extending (financial) producer responsibility** for key products or **shifting taxation** to environmental impacts.
- **We also remain critical** to the **following proposals** considering their negative consequences for the ongoing implementation of the existing Eco Design Directive:
 - The development of **environmental footprint methodology** for providing product information on complex products consisting of several hundreds/thousands of components – we support (an extended) Energy Label instead
 - Addressing the environmental footprint of products, including through setting requirements under the **Eco Design Directive**, to boost material resource efficiency of products (e.g.: reusability/recoverability/recyclability, recycled content, durability) and through an **expansion of the scope of the Eco Design Directive** to non-energy related products – energy consumption in the use phase is the overriding aspect for almost all energy related products
 - Proposing **water efficiency targets** and related efficiency **measures**

We specify our comments hereafter:

1. RESOURCES AND THE EUROPEAN ENGINEERING INDUSTRIES

With more than 4,500 billion Euro worldwide turnover in 2010¹, the electrical, electronic, mechanical engineering and metalworking industries represent the worldwide largest economic sector. The European engineering industries that are represented by Orgalime account for some €1,510 billion of annual output, represent some 28% of the output of manufactured products and also a third of the manufactured exports of the European Union. The industry employs some 9.7 million people, many of whom are highly qualified and specifically trained personnel.

Table 1: World markets, 2010 in billion Euros:

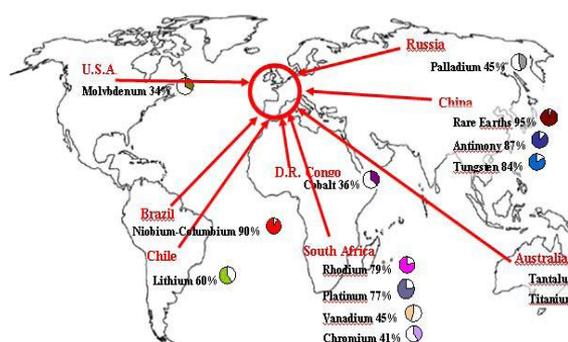


(Source: IHS Global Insight, ZEW, ZVEI)

1.1. THE MARKET REALITIES...

European engineering companies require **many different resources and raw materials** for manufacturing in Europe, including energy, chemicals, ferrous and non-ferrous metals, minerals or plastics. As a high tech sector, electrical and electronic engineering particularly depends on rare earths². **Almost all elements are entering engineering products:** While during the 1990s, the semiconductor industry used, for example, some 16 chemical elements, up to 60 elements are entering the manufacturing process today. At the same time, **supply of rare earths is often highly concentrated** (95% are provided by China). So are many other raw materials, e.g.: China holds 35% of worldwide aluminium production, Chile the largest market share (34%) of copper and 60% of Lithium, or Russia produces around a fifth of nickel besides 45% of worldwide palladium.³ This situation often results in ever higher raw material prices and related speculation on price and amounts of raw materials being made available on the international raw materials market.

Table 2: Major global producers of selected high-tech metals (2006)⁴



Data source: World Mining Data (2008) **=USGS (2008)
The figures and pie graphs indicate the proportion of world production

¹ Source : IHS Global Insight, ZEW, ZVEI

² Rare earths include : scandium, yttrium, lanthan and 14 lanthanoides

³ Source : ZVEI-Commerzbank Studie : "Zur Rohstoffsituation in der Elektroindustrie"

⁴ Commission Staff Working Document on Raw Materials Initiative, SEC(2008) 2741

The European Engineering Industries Association

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Since European engineering industries are often at the end of value chains, their dependence on the availability of resources is a particularly sensitive issue. A lack of resources –even in case of low quantity- has the ability to stop entire production processes. Therefore, secure – and affordable - availability of resources is crucial for our industries.

1.2. HOW WE DEAL WITH IT

Given this market situation and the fact that up to 50% and sometimes even more of total costs relate to material and resource consumption, being proactive on resource efficiency is fundamental for the competitiveness of European engineering industries: it is a question not only of economic reality, but also of economic necessity.

Our industry's resource efficiency activities include the following:

- Manufacturers constantly improving their own designs and production processes and thereby materials consumption, for example through using industrial monitoring, control and automation equipment to increase efficiency; this also takes place along the whole value chain.
- Companies investing in research and innovation to “do more with less” or even substitute rare earths and other scarce resources wherever possible.
- Companies trying to diversify to the extent possible their supply chain (additional suppliers and countries) and constantly increasing the value chain.
- Maintaining certain strategic stocks.
- Negotiating long term supply contracts.
- Establishing Joint Ventures or moving production closer to the raw material supply
- Pursuing vertical integration (meaning buying shares of firms that trade raw materials or extract them).
- Substituting rare earths and other scarce resources where this is possible
- Reusing, refurbishing and repairing equipment where this is economically and technically viable.
- Managing end of life appliances (collection, treatment, recycling, recovery): Directive 2002/95/EC (WEEE- under recast) sets recycling and recovery targets. Some 10 million tons of WEEE arose in 2010 in the EU. Today's WEEE recycling technology allows for the recovery of up to 95% of the base materials.
- Raising awareness on the matter and exchanging best practices: Orgalime's national association members organise particular seminars, workshops and information events or release publications to their member companies on resource efficiency and related topics.

In the annex to this paper, we provide some resource efficiency examples of our industries.

Main recommendations for the EU's Resource Efficiency Policy which we believe should:

- Focus on improving **continuous and competitive access to international raw materials markets** for European engineering companies, address barriers to trade and unfair competition at EU and international levels, and avoid that EU action in that field leads to additional increases in raw material prices.
- **Support industry driven activities** on resource efficiency and companies' own resource efficiency projects.
- Conduct thorough and representative **impact assessments prior to any legislative measure**.
- Provide **an integrated policy approach** that would strive for maximum coherence with other EU legislation or policy initiatives
- Address the issue from a **full life cycle perspective**, in particular in the area of resource efficiency of products, and takes into account all pillars of sustainability, as is the case in the Eco Design Directive.

- Ensure a **harmonised and sound implementation of the Waste Shipment Regulation across Member States, as well as ensuring effective enforcement and control of shipments** in order to combat illegal exports. Implementation of the regulation should primarily focus on waste shipments with high economic significance in respect of recyclable material content as well as those with high environmental concerns.

2. COMMENTS ON SPECIFIC PROPOSALS OF THE RESOURCE EFFICIENCY ROADMAP

2.1 RESOURCE EFFICIENCY AND THE ECO DESIGN DIRECTIVE (2009/125/EC)

Orgalime supports the holistic approach of the Eco Design Directive: It establishes a framework for setting eco design requirements throughout the whole life cycle, addressing all life cycle stages and all environmental aspects and thereby ensures constant environmental improvement. At the same time, this approach allows a focus on those areas where most can be achieved without having a negative impact on other environmental aspects throughout the various life cycle stages. Finally, the Directive takes into account costs and other important product aspects, such as safety, or further sustainability criteria.

The ongoing implementation has regulated resource efficiency parameters where they were identified as significant in accordance with article 15 of the Directive: The recently adopted EU 2020 flagship initiative for a resource efficient Europe and subsequent Resource Efficiency Roadmap also prioritise energy efficiency. **The ongoing implementation on some 35 different product groups** that have/are about to establish eco design requirements on the energy consumption of these products during the use phase are therefore **a milestone for the realisation of the EU's Resource Efficiency agenda**. In addition, where this has been identified as a significant factor, implementation measures have also addressed further resource efficiency parameters, such as water use of certain appliances.

Any further resource efficiency parameter must be equally assessed against all criteria of the Eco Design Directive. In particular, a “**significant potential for environmental improvement without entailing excessive costs**” according to article 15 of the Directive needs to be demonstrated in advance.

For most appliances covered (and regulated) by the Eco Design Directive today, energy consumption in the use phase is by far the overriding environmental aspect according to the preparatory studies carried out under the Directive. Any future action on resource efficiency must therefore fully acknowledge these findings, demonstrate significant potential for improvement without entailing excessive costs from a life cycle perspective and must not lead to isolated resource efficiency measures that would undermine energy efficiency or other relevant product characteristics.

Orgalime recalls the existence of the MEErP methodology as the methodology specifically developed for the setting of any eco design requirements. It should remain the further basis for the implementation of the Directive to avoid disruption of the ongoing work.

Standards in support to legislation have to date not been sufficiently explored for the implementation of the Eco Design Directive. However, standardisation will be the key to establish a level playing field. The current review of standardisation, with the recent Commission proposal for a Standardisation Package, can be an opportunity to also better explore the tool for the implementation of the Eco Design Directive.

Finally, an extension of its scope appears premature to us as the Directive is still in the early phase of implementation and further experience needs to be gained.

Main Orgalime recommendations and proposals:

- We support that a thorough assessment should precede any use of Eco Design Directive for the further implementation of the EU's Resource Efficiency policy.
- When further addressing the resource efficiency aspect of **products already in the scope of the Eco Design Directive**,
 - the conclusions of preparatory studies for existing and ongoing lots need to be fully respected and taken into account in the further process.
 - any requirements should be supported by a thorough use of European standardisation.
- When addressing the resource efficiency aspect of **products not in the scope of the Eco Design Directive** today, a separate Directive to address the resource efficiency issue taking the Eco Design Directive as a model should, in our view, be considered. Orgalime believes that a further extension of the scope of the Directive beyond energy related products is premature. If regulators decided that the scope of the Eco Design Directive should be further extended, the existing framework of the Eco Design Directive 2009/125/EC must be maintained for energy related products in order to not disturb the ongoing implementation. It is important for the environment and our industry not to jeopardise the on-going implementation process through generating regulatory uncertainty and instability..
- In any case, we believe that promoting resource efficiency of products needs to respect the general principles elaborated in this paper, including:
 - Embedding the resource efficiency aspect of products into a **full life cycle approach** taking into account all other environmental aspects at all stages of the life cycle.
 - Applying all criteria and procedural elements of the Eco Design Directive, in particular that further action on resource efficiency for a certain product group needs to demonstrate **significant potential for improvement without entailing excessive costs** from a life cycle perspective.
 - Taking into account **further sustainability aspects**, such as economic or social.
 - Maintaining **flexibility in the choice of setting generic and specific eco design requirements** depending on the product sector in question.
 - Ensuring **consistency** of resource efficiency legislation with other EU regulations.
 - Making **better use of standardisation** for the implementation of the Eco Design Directive.

2.2 RESOURCE EFFICIENCY AND EU WASTE POLICY INITIATIVES

The EU has a considerable acquis of waste legislation, including EU waste shipment Regulation or the sector specific Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE), which is currently recasted. Once legislation has passed, **enforcement is often weak**. Before proposing amendments to such legislation or introducing new tools, we feel that the potential of the existing legislation should be better enforced. This is also the case for the Directive on Waste Electrical and Electronic Equipment and EU Waste Shipment Regulation.

Orgalime generally supports the promotion of recycling in Europe, which could contribute to a more independent European raw materials market through a **strengthened secondary market**. This increases competition in prices of raw materials and contributes to a more sustainable supply of raw materials and improved access to raw materials for engineering industries. However:

- **Product functionality must not be compromised:** notwithstanding the constant improvement of recycling technologies, the use of recycled materials in products can have limits – high tech applications may need primary raw materials to deliver their function.

- **Expanding producer responsibility as a means to achieve this objective**, as proposed in the Resource Efficiency Roadmap, **is not the best option**, since producers do not have enforcement powers on other actors that are handling waste. This issue has been extensively discussed under the recast of the WEEE Directive, which does not mandatorily extend (financing) producer responsibility.

The Roadmap also proposes to reinforce recycling through product design requirements, such as “recycled content requirements in products” or requirements on the “recoverability, reusability, recyclability or durability of products”. Since the products that Orgalime industries manufacture are all in the scope of the Eco Design Directive, any such potential requirements need to fully apply all criteria and procedural elements of the Eco Design Directive in full consistency with the findings and requirements under the ongoing implementation process (see comments under chapter on Resource Efficiency and Eco Design Directive 2009/125/EC”).

Main recommendations and proposals:

- In first instance, we recommend **improving enforcement of existing waste legislation**, including the WEEE Directive but in particular the EU Waste Shipment Regulation.
- Furthermore, we recommend supporting the proposals of the Roadmap for a Zero landfill policy.
- We also support the proposal for ambitious collection, recycling and recovery targets, but these should still be realistic and based on experience.
- Reinforcing the secondary raw materials market is a good idea, too; however, market forces should be the drivers of innovation in recycling technologies, not product recyclability/recoverability/durability standards.
- We recommend abstaining from setting mandatory targets on the use of recycled materials in certain products.
- For Directive 2002/96/EC (WEEE) and its recast, we recommend to:
 - Combat illegal waste shipments via improved enforcement of legislation, without however limiting shipments of used equipment for legitimate reuse, repair or refurbishment.
 - The proposal for making producers fully responsible for the end of life stage (especially via the proposal for extended financing obligations) cannot work in practice, in particular not in the absence of the right for producers to physically organise collection, since WEEE is a multiple stakeholder process and producers do not have enforcement powers on other actors – we do therefore not support it.
 - Also, proposals for establishing new business models, guidance on take back and recycling schemes or support for repair services need to be carefully assessed in order to not compromise other important environmental or economic factors.
 - The proposal that EU funding should move up the waste hierarchy can in general be supported, however, must not result in compromising other environmental objectives either (e.g.: repair/reuse of products may alter energy efficiency improvements of the product).
 - Higher collection rates can be achieved by full reporting of all WEEE flows by all actors and should be applied on the basis of “WEEE generated”.
 - Orgalime’s detailed positions on the WEEE recast are available at <http://www.orgalime.org>

2.3 RESOURCE EFFICIENCY AND EU ENERGY POLICY INITIATIVES

As for the Eco Design and WEEE Directives, Orgalime's main concern is that resource efficiency policy should not conflict with the EU's energy policy objectives and established legislative measures. We therefore welcome that the Resource Efficiency Flagship initiative itself prioritises energy efficiency.

More and more energy related products targeted under the Eco Design Directive are in parallel subject to implementing measures under the Energy Label Directive. We are concerned with proposals under the Resource Efficiency Roadmap for informing consumers on the environmental performance of products based on an environmental footprint methodology, since this may weaken the energy label and its proven successful implementation in our industry. Already today, the energy label has demonstrated that it can also work for providing useful information to consumers on other parameters than energy consumption, such as water consumption. This is promising for the future and in our view a more appropriate way of raising consumer awareness than condensing all environmental aspects into one figure, as the environment footprint approach seems to envisage.

Besides, a common methodology for environmental footprints of complex products, such as electrical and electronic equipment, appears highly complicated to us. We are concerned that it risks leading to providing misleading information for the consumer, especially if the methodology were to result in one all-encompassing figure being provided. At the same time, such an approach bears significant negative consequences for industry, namely distortion of competition.

Main recommendations and proposals:

- We recommend supporting a strong implementation of the energy label and using it **also** as the basis **for any possible extended labelling obligations** beyond the parameters of energy consumption for consumer products. Labelling requirements for professional equipment may in general not be an adequate tool for providing environmental information.
- Allow **flexibility in the tools for providing product information** to the consumer, such as the use of the eco label for best performing products, product declarations or use of international standards such as ISO or the energy label.
- The **appropriateness** of the proposal for establishing a **common methodology for environmental footprints on complex products should be carefully assessed**.
- The **final decision to choose a product or technology** should remain with the **consumer**, not with legislation.

2.4 RESOURCE EFFICIENCY AND EU CHEMICALS POLICY

The Roadmap proposes that all substances of very high concern shall be on the candidate list of the REACH Regulation by 2020. While the requirement itself is established under the REACH Regulation, the given timeline is a new element.

Adding a substance on the candidate list triggers information, notification and registration requirements for articles, such as engineering products under REACH. Compliance with these obligations requires substantial communication efforts in the supply chain that need a certain time to be implemented. We therefore believe that filling the candidate list should be realistic in terms of timing and supply chain management.

From ongoing JRC studies for the implementation of the Resource Efficiency Roadmap through the Eco Design Directive it appears that further legislation to restrict the use of certain substances or to provide information on substances used in energy related products is under consideration.

The Eco Design Directive addresses all environmental aspects of products, including the use of hazardous substances, throughout their whole life cycle, which we support. Nevertheless, there is in addition, the REACH Regulation which provides Europe with a harmonised framework for the EU wide management of chemicals, which also applies to products regulated under Eco design Directive, and a sector specific Directive 2011/65/EC on the restriction of the use of hazardous substances in electrical and electronic equipment (RoHS). It is therefore of utmost concern to our industry that these regulations should be consistent with each other.

Industry in Europe requires a consistent, predictable and reliable legislative framework without multiplied requirements and consequent inefficiencies for implementation and enforcement and ineffectiveness for the environment.

Main recommendations and proposals:

- The **implementation process to the Eco Design Directive can assess the use of hazardous substances** during use, manufacturing and end-of-life treatment for a particular product group, as it has been done under the ongoing implementation. In case the preparatory study demonstrates that the use of a specific substance in a given product category fulfils all criteria of the Eco Design Directive for setting requirements, the **relevant substance restriction should be adopted under the REACH Regulation** or, where relevant, under the Recast RoHS Directive in full coherence with the REACH Regulation.

2.5 DEVELOPING RESOURCE EFFICIENCY INDICATORS AND TARGETS

A solid knowledge base is an indispensable prerequisite for introducing a successful EU Resource Efficiency policy in environmental but also economic terms. Developing appropriate and meaningful indicators are therefore an important step in the right direction.

However, we remain reluctant about the Roadmap's proposal for setting resource efficiency targets. Target-based resource policies can, in our view, easily have a negative impact on innovation or other important product characteristics, such as safety, and therefore require cautious examination. This is particularly true for simple numerical targets, such as a universal resource productivity target, minimum recycled material rates or a target limiting the use of specific resource.

The proposal to launch an "EU Resource Efficiency Transition Platform" can be helpful for discussing all these matters besides building a common understanding and commitment for the way forward. It should therefore be an inclusive forum that allows all interested parties to participate and obtain information in a transparent manner.

Main recommendations and proposals:

- The announced "**EU Resource Efficiency Transition Platform**" should be representative act in a transparent manner and be open for participation for the affected industries.
- **Avoid target-based policies**, such as the introduction of a universal resource productivity target, a target on the content of recycled materials or a target limiting the use of specific resource.

2.6 RESEARCH & INNOVATION – FINANCING THE CHALLENGE

The Roadmap in our view correctly emphasises the role of research and innovation in the context of resource efficiency. Our industries are constantly investing in research, including for the purpose of improving resource efficiency of processes or products. However, better framework conditions and demand side measures, as identified in the Roadmap, could be helpful to overcome existing hurdles, especially on financing.

As already the case for energy efficiency, the financing sector is often reluctant to finance projects arguing with risks and uncertain return on investments. This could become a barrier for resource efficiency projects, too.

We agree that resource efficiency can reduce costs, but it often requires initial, in our view substantial, investment (UNEP estimates the annual financing needs for making the world economy resource efficient between 1.05 and 2.59 trillion US\$).

We therefore welcome that the Roadmap proposes to set up a “Resource Efficiency Finance Round Table” and we welcome that the EU Horizon 2020 Programme should support innovative resource efficiency initiatives.

When determining the details of the programme, it is of utmost important that actions do not distort market forces and that fair competition in the market place is ensured.

European engineering industries as the main provider of innovative technology need to be involved.

Main recommendations and proposals:

The following proposal of the Roadmap should, in our view, be supported:

- Developing “innovation Partnerships” for meeting resource efficiency goals.
- Developing Joint Technology Initiatives or other forms of PPPs, as well as Joint Programming Initiatives that pool national research efforts in areas of resource efficiency.
- Focusing EU research funding (EU Horizon 2020) on key resource efficiency objectives, supporting innovative solutions for sustainable energy, transport and construction, recycling, reuse, substitution of environmentally impacting or rare materials.
- Launching a “Resource Efficiency Finance Round Table”.

2.7 SUPPORTING RESOURCE EFFICIENCY INTERNATIONALLY

We welcome that the Roadmap acknowledges the need to seek the support of other countries and players at an international level. Otherwise, negative impacts on the competitiveness of EU engineering industries are in our view inevitable. We support all actions proposed under the Roadmap in this respect.

However, we believe that essential aspects have not been taken into account in the Roadmap in this context, namely combating today’s unfair competition methods in combination with price speculation and strategic protective measures.

Free trade and open markets are beneficial for society as a whole. This is equally relevant for resources as it is for the international trade of goods and services.

Partners, such as China, that participate in and benefit from the international trade of goods should grant fair access to raw materials without barriers to trade.

Main recommendations and proposals:

- In addition to the proposals of the Roadmap, we suggest to:
 - **Support EU companies in their resource projects outside Europe.**
 - Promote **free trade and markets** at EU but in particular at international level.
 - Work towards **removing barriers to trade** at international levels.
 - **Combat protectionism and unfair competition** at EU and international levels.

3. CONCLUSIONS

Orgalime industries are committed to the sustainable use of raw materials and resources. There are a variety of tools available, both voluntary and legislative, that today encourage work in this field and which should be supported in the upcoming Resource Efficiency Roadmap or at least not undermined by proposals, such as mandatory minimum recycling rates for products, full producer responsibility for the end of life stage of products, a methodology for environmental footprints, an erroneous implementation of the Eco Design Directive or a premature expansion of its scope beyond energy related products.

We hope that the Resource Efficiency Strategy will support our industry's efforts and in particular help to:

- strive for a common knowledge base of the matter at both, EU and international level.
- focus on improving access to raw materials for European engineering industries on EU and international markets, on removing existing barriers to trade and on reducing today's vulnerability of EU engineering industries due to protectionism, strategic behaviour and price speculations on resources.
- create a framework to make existing resource efficient products and technologies relevant in the market place.
- create real commitment for strong enforcement of the EU's waste legislation to avoid leakage of valuable waste fractions outside Europe and to strengthen the EU's secondary raw materials market.
- and finally will tie in fully with the current work under existing EU legislation, such as the Eco Design, WEEE, RoHS, Energy Labelling and Energy Efficiency Directives or the REACH Regulation.

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ANNEX: Examples of Resource Efficiency in European Engineering Products

Example 1: Reduction of input material (doing more with less)

Required storage place for 8 MB of memory in the 1970s and today's technologies: The first super computer in 1976 had 8 MB of memory and a weight of 5.5 tons. Today's smart phones have exponentially improved memory capacity and reduced to pocket size. (Source: ASML, Netherlands)



1976



2011

Example 2: Savings in energy and natural resources

Improved baggage handling conveyors are 100% PVC free (replaced by recyclable polyester), use 100 kg less natural resources than conventional systems, lead to energy savings of up to 80% and reduce maintenance cost and time (Source: <http://www.vanderlande.com/News-Events/News/Savings-in-energy-and-natural-resources-with-new-BLUEVEYOR-baggage-handling-conveyor-from-Vanderlande-Industries.htm>)

Example 3: Research & innovation

Project on "Improving stretch forming of complex shapes": Through this research, the number of forming steps could be reduced from 9 to 6, the manufacturing time was reduced by 50% and scrap went down from 50% to 10% (Source: www.m2i.nl)



Example 4: Substitution of critical raw materials

Researchers have developed nanostructure aluminium which can substitute copper in many future applications. It reduces weight, material input and increases efficiency.

(Source: http://www.siemens.com/innovation/apps/pof_microsite/pof-spring-2010/html_de/forschungsinstitute-in-russland.html)

Example 5: Recycling –strengthening the secondary raw materials market

Today's WEEE recycling technology allows for the recovery of up to 95% of the base materials.

Example 6: Wood drying is the most energy intensive procedure of the treatment of wood. With new dry kiln technologies and an intelligent process management, 40 % of the electrical and more than 10 % of the thermal energy can be saved. The payback period of this technology comes to only 15 months.

Example 7: Using intelligent automation engineering, such as better metering or a better management of processes, realises **significant energy savings**. (Source: ZVEI brochure: "High tech environmental and climate protection: Automation putting energy efficiency first" and ZVEI brochure "The versatile contribution of process automation to improving energy efficiency").

Example 8: Savings in energy and natural resources through the application of the energy label of washing machines including water efficiency

(see: <http://www.newenergylabel.com/de/labelcontent/washers>).