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RESOURCE EFFICIENCY

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Contents

Brussels strives to keep resource-efficiency 'on the radar'

Faced with strong political headwinds against new environmental legislation in the current economic crisis, the European Commission is multiplying initiatives to keep resource-efficiency on the political radar.

Academic studies have long warned that global supplies of natural resources such as fossil fuels, metals and water were being depleted, pointing to looming environmental conflicts related to resource scarcity.

Three billion people are expected to join the world's middle-class in the next two decades, fuelling a boom in commodity prices and stoking tensions between nations over scarce natural resources.

The global consulting firm McKinsey formulated the question in the following terms: "Is the world entering an era of sustained high resource prices, leading to increased economic, social, and geopolitical risk?"

EU officials have been quick to highlight those concerns, calling on European countries to take action.

"We face a situation where both our economy and our environment are in a crisis," Janez Potočnik, the EU's environment commissioner, said recently.

Yet there are no legally binding laws, targets or even measures on resource efficiency at the European level. And the conclusions of EU leaders' summits have not included any call for EU legislation on the matter. The EU is already at the forefront of global environmental policy and should not penalise its industry with additional green legislation, the argument goes.

"We arrived in a period of crisis and people interpreted environmental policy measures as a constraint on business," said William Neale, who is responsible for sustainable production and consumption at the European Commission's environment department.

"But resource efficiency is about helping businesses instead in this transition period to a time of scarcer resources," he added.

Resource efficiency reboot

Faced with reluctant member states, the European Commission has focused on measuring the benefits of decoupling economic growth from natural resource use. In September 2011, it unveiled a Roadmap to a Resource Efficient Europe, recommending the introduction of indicators and targets across the 27-nation bloc.

The EU executive then sought to raise the issue's profile by launching a Resource-Efficiency Platform chaired by John Bruton, former Irish prime minister and EU ambassador to the United States.

Launched in June 2012, the platform comprises 34 members including four EU

Continued on Page 2

Continued from Page 1

commissioners, environment ministers from four countries, MEPs, business chiefs, academics and representatives from environmental and consumer groups.

One of the platform's main goals is to provide guidance and create the conditions for investments in resource efficiency. "How can we stimulate this and ensure the necessary financing?," the group said in its first statement.

"Active commitment from a wide range of businesses will ensure that resource efficiency is not just about encouraging the green sector of the economy, but about greening throughout the economy," Potočnik said at the platform's launch.

This summer also witnessed a promotional drive backed by notable figures such as Jeremy Grantham, co-founder of one of the largest asset management companies in the world, and Ellen MacArthur, the world-renowned yachtswoman who now heads a foundation that promotes sustainability.

Keeping the issue on the political radar

This flurry of public relations activity is aimed at keeping the issue on the political radar, in the face of economic troubles and political resistance, said Neale.

In the absence of binding EU laws on resource efficiency, the Commission has tried highlighting the issue in other pieces of European legislation and policy, he said.

"Even if resource efficiency is not in the limelight, we are working a bit under the political radar of decisions, but our idea is to integrate them in as many policies as possible," Neale said. Resource efficiency is now, for instance, mentioned in European renewable energy legislation, which stipulates that member states should "make prudent and rational use of natural resources".

"Those finite resources, recognised in various international instruments to be of value to all mankind, should be preserved," the text reads.

Reducing the EU's dependence on natural resources is now mentioned in the so-called Europe 2020 strategy for sustainable growth and jobs, the EU's economic roadmap for the end of the decade. Resource efficiency has also made its way into the so-called 'European Semester' of economic policy coordination, the EU's new soft instrument to monitor economic and fiscal reforms, which was introduced in the wake of the sovereign debt crisis.

As part of the semester, the Commission suggested shifting the burden of taxation away from labour towards natural resource use. Subsidies harmful to the environment should also be reformed, the Commission wrote as part of its European Semester.

However, when it comes to concrete reforms on green taxation, the EU tends to get cold feet.

In April, the European Parliament shot down a Commission proposal to erase tax benefits for diesel fuel, saying that a period of austerity and high fuel costs was not the time for such moves.

And recent moves by Britain to apply a lower VAT rate for energy-saving materials were rejected by the European Commission on the grounds that such decisions need approval from the other 26 EU states.

Platform focus on waste collection, indicators and innovation

In the meantime, the Resource Efficiency Platform is focusing on three areas of concern:

- Separate waste collection methods;
- Indicators needed to measure resource efficiency;
- Innovative extractive technologies.

On waste collection, the Commission says sorting it as close to the source as possible is best, warning, however, that this should mean building more composting plants, not doing more incineration. Incineration is a method widely used in the EU, but it carries environmental baggage.

In February 2012, Gerben-Jan Gerbrandy, a Dutch Liberal MEP who drafted a resolution on resource-efficiency for the European Parliament, proposed a 'Schengen area' for waste that would allow all sorts of second-hand resources to be traded more freely between member states. This was rejected by MEPs and the Commission, because, they claimed, it is hard to have EU-wide legislation overruling national laws for waste.

But on an individual basis, more and more legislation on moving waste is being adopted. For example, Sweden has long been processing waste coming from the Netherlands - and using the resulting energy to heat its homes.

Similarly, Germany has excess waste management technologies, including its advanced biogas industry. An estimated 90% of the world's biogas power plants are found in Germany. Poland, which burns 80% of its waste, could move its trash to Germany, where it would be processed in a more climate-friendly way.

But one of the main changes which needs to take place in the future, the Commission said – and which the Platform is working on - is the separation of waste at the source.

"If you have separate collection, you have separate waste fills and it is much easier to pump it back into the circular economy," Neale said.

Ecodesign is also very important at the design stage of the process. This way, the product manufacturers can repair, refurbish or recycle the materials.

Similarly important is innovation - another flagship of the Resource Efficiency Platform. Innovation can help increase the supply of raw materials in a number of ways – from new mining methods, through improved product design for recycling to ways in which rare metals can be retrieved from waste.

The European Commission estimates that the value of unexploited European mineral resources at a depth of 500-1,000 metres is about €100 billion.

If the secondary materials are valuable, there is a business opportunity in this. "In Sweden or more advanced countries, there is a battle between who gets the waste to sort it out," Neale said. "Clearly, there's money in it."

Debate rages over how to measure resource efficiency

Industrial and environmental groups are lining up to pressure the European Commission on how best to measure resource efficiency. Businesses have warned that a one-size-fits-all approach will hamper economic growth at a time when Europe strives to emerge from its sovereign debt crisis.

The European Commission is to present on 14 December the results of recommendations made by experts on which indicators are the more suitable for monitoring progress under the Resource Efficiency Roadmap set out in September 2011.

Today, each EU citizen consumes 16 tonnes of material annually, of which six tonnes are wasted, with half going to landfills. The aim of the roadmap was to decouple resource use from economic growth.

Resource efficiency means minimising the negative environmental impacts generated by the use of natural resources in a growing economy. To measure it, the EU needs indicators and targets, which will also help to track and guide the progress made up to 2020 and 2050.

"Improved accounting is essential for wise management," Jacqueline McGlade, executive director the European Environment Agency, told a recent World Resources Forum. "You can't manage what you don't measure."

The EU executive suggested measuring progress by introducing a 'lead' "resource productivity" indicator that would measure GDP against material consumption expressed in euros per tonne. This lead indicator will be complemented by the "dashboard" of indicators - such as for carbon, land and water - which was already proposed in the Resource Efficiency Roadmap.

This approach would serve as a basis for resource efficiency targets.

"This will be a critical exercise for the 27 member states but we've seen the model of effort sharing for the climate targets and that works well," German Social-Democrat MEP Jo Leinen said.

But there is broad disagreement on this measure.

'Severe shortcomings'

Anec, an NGO defending consumer interests in standardisation issues, contends the GDP-linked indicator "suffers from severe shortcomings" because the EU's economies differ greatly.

In a response to the Commission's recent call for consultation on resource efficiency indicators, Anec said the indicator is good for measuring de-industrialisation, "but this is not the objective."

The European Steel Association, or Eurofer, said "there is no such thing as a one-size-fits-all indicator" and that "it would be dangerous to work with overall indicators."

Other groups – including Orgalime, the European Engineering Industries Association – say indicators need to be based on robust data.

"Resource efficiency indicators need to make sure decisions are based on a deep analysis," Veronique Steukers of the Nickel Institute agreed.

Euromines, the European association of mining industries, says that not all existing indicators for measuring resource efficiency are applicable to extractive operations and may therefore provide a wrong basis for decision making.

Concepts such as "resource use", "material footprint" and "material intensity" often underweight the importance of stability and durability of materials, according to Euromines.

William Neale, who is responsible for resource efficiency in the European Commission's environmental department,

Continued on Page 4

Continued from Page 3

acknowledged that finding the right headline indicator that sets a direction and a goal isn't easy. "It's a case of getting the right indicators. It's a difficult task, intellectually speaking." he said.

The Commission defends the GDP indicator because it is the one for which all member states have solid data.

Neale also thinks that this indicator could help businesses tap funds necessary for new investments.

"if we say this is the way things are going then companies, investors, funds and so on can start seeing that that is the writing on the wall. That gives increased confidence and predictability in the direction we need to go, rather than then hitting the constraints of supply, and the price volatility and hikes and so on," he said in an interview.

Green groups are wary

Environmentalists have criticised the indicator, saying it ignores land, water and carbon footprints. Businesses have also complained, claiming that the indicator should also take into account the environmental benefits of raw materials use, not just the damage.

"This indicator cannot be used to achieve the Commission's vision for 2050, whereby the EU's economy respects constraints and planetary boundaries," Friends of the Earth Europe said in documents presented to the Commission.

The GDP measure does not accurately show whether an economy has improved or worsened its resource use," the green campaigners wrote.

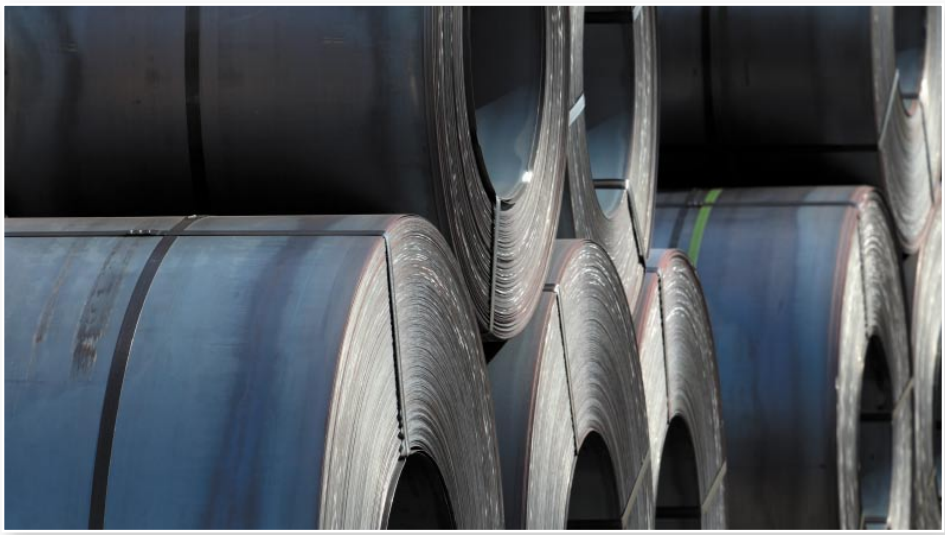
Friends of the Earth Europe suggested the Commission should not set aggregated indicators that combine economic and environmental information. At the moment, the lead indicator does exactly this, since it is the ratio between the environmental impact related to resource use and the overall economic indicator – in this case GDP.

"It is essential that the indicators used are consumption-based, transparent and with a direct link to the statistical system," Friends of the Earth Europe said.

Ernst Ulrich von Weizsäcker, co-chair of the UN's International Panel for Sustainable Resource Management, said there is a need for lawmakers to intervene in regulating resource use, as long they are not "too prescriptive".

"Nothing is moving in the right direction if all is left to the markets," but intervention should not be too bureaucratic," von Weizsäcker said.

Metal, steel industries warn EU efficiency laws could force them out of Europe



Steelmakers and other metals industries fear that limits the EU is considering imposing on the amount of natural resources they use will push them out of Europe, where environmental regulations are less stringent.

The European Commission plans to decouple economic growth from natural resource use may sound like common sense.

Companies that use less energy, water or land generate less waste per unit of revenue and tend to produce higher investment returns than others, according to a recent study published in the Harvard Business Review.

The Commission's Roadmap to a Resource Efficient Europe, adopted in September 2011, suggested introducing indicators and targets across the 27-nation bloc.

Although the targets are not obligatory for the private sector, like CO_2 emissions targets, the Commission believes that measuring performance will be sufficient to drive the transition to a resource-efficient economy.

William Neale, in charge of resource efficiency at the European Commission, says that indicators give a "clear signal" to industries where they need to invest in order to make it easier to shift to an economy where growth is de-coupled from resource use.

"If we say this is the way things are going then, companies, investors, funds and so on can start seeing that that is the writing on the wall," Neale told EurActiv

Continued on Page 5

Continued from Page 4

in an interview.

Yet the cost could be high for private companies, with resource-efficiency improvements often requiring substantial initial costs and a lengthy return on investment.

Energy intensive companies: 'We would relocate abroad'

Heavy industries that use a lot of energy, like the metal and steelmaking sectors, have come to symbolise those concerns.

They fear that natural resource use indicators will be a stepping stone towards stricter regulations that will hurt their competitiveness in an already tough international environment.

As a result, some have warned they could be forced to close down factories and relocate abroad.

Metals Pro Climate, a group of leading companies in the non-ferrous metals industry, says resource efficiency indicators "may be misleading".

Indicators, it argues, "could lead to policies that would imply that energy-intensive companies would relocate abroad." At the end of the day, "Europe would merely increase its import of metal sheets, instead of metal ores," the group said in a statement.

The steel industry is also concerned about resource-efficiency targets, arguing that steel is needed for renewable and energy efficiency solutions that are expected to drive future demand.

"Steel will be a part of a sustainable future," said Eurofer, the European steel association, indicating that the metal is widely used in manufacturing wind turbines or lighter cars that consume less energy.

"But will it be produced in or outside Europe?" it asked.

For Oliver Bell, president of Eurometaux, the European association for the non-ferrous metal industry, setting targets will definitely not help. In a global economy, bureaucratic

legislation can hurt European industry, he told EurActiv.

"The resource efficiency indicators currently under discussion are mainly based on quantities of raw materials in relation to the gross domestic product - for example DMC," Bell said, using an acronym for domestic material consumption.

"Unfortunately these indicators worsen if the gross domestic product decreases, e.g., due to economic downturn, while the use of raw material stays the same. If these kinds of indicators drive policy, it could imply that energy intensive companies relocate abroad."

Veronique Steukers of the Nickel Institute agreed. "One needs to understand the global nature of resource efficiency," she said. "We are competing at an international scale. Prices are set globally". And companies are already motivated to use raw materials in an efficient way in order to compete on the international market, she argued.

Similarly, Patrick de Schrynmakers, of the European Aluminium Association, said that the EU must be "careful" when drawing legislation. Setting taxes on resources in Europe will encourage imports instead of local production, de Schrynmakers warned, with potential unintended consequences on global greenhouse gas emissions.

"It's important to think in terms of global life cycle. If we are going to import more metals, instead of recycling them here in the EU, then GHG emissions will increase," de Schrynmakers said. Exports of scrap aluminium, he added, "should be considered as European electricity export without compensation."

'Killing industry with kindness'

The European Commission says it

Continued on Page 6

Continued from Page 5

understands the industry's concerns but argues that the transition to a leaner economy is inevitable.

"It's going to happen anyway because resources are under increasing pressure," said the Commission's Neale. "We have the 9 billion population predictions, 3 billion new middle class consumers by 2030. Which is wonderful… it's new markets, new consumers and so on, but it will put a new pressure on resources which means we need to undergo this transition."

By setting indicators, Neale contends the Commission is only trying to make the transition smoother and avoid a hard landing for European industries which have seen the price of commodities booming in recent years.

Taking the German manufacturing sector as an example, Neale pointed out that materials alone represent about 40% of the sector's input costs. "That's twice what they pay for labour. So of course if material prices are going up, it's obvious business sense for them to use the resources better."

"We can't help industry by saying we can just carry on the way we want to carry on. That's really just killing industry by kindness," Neale told EurActiv in an interview.

'Creative destruction'

But Neale also acknowledged that the transition to a resource-efficient economy will come at a cost.

"It involves pain. It's creative destruction. You will have certain sectors and industries which will gain, and others which will lose."

In the European Parliament, influential lawmakers have tried to assuage fears expressed by heavy industries.

"I can understand industry's fears but they are ungrounded," said German Social-Democrat MEP Jo Leinen, who works on environmental issues at the European Parliament.

"We are very well aware of it. In the Resource Efficiency Platform, we have a close dialogue with industry and other stakeholders," said Leinen, assuring companies that the EU will not set rules that will force European industry to move abroad.

"On the contrary, we want to create a framework which will help industry to improve their performance and become more resource efficient," Leinen said.

The German MEP referred to earlier EU debates on climate and energy legislation to make his point. "industry was afraid the climate and energy package would make them move their business abroad and instead the EU has become a main global player in green and climate-friendly technologies," Leinen said.

"The same should apply for resource efficient products and practices," he added.

Rio+20 and global initiatives faltering

As metal and steel industries point out, the debate on resource efficiency has to be seen in global context.

But getting countries to agree on a common international approach is no easy task.

Environment Commissioner Janez Potočnik presented the EU's resource-efficiency roadmap at this year's Rio+20 United Nations summit. In Rio, the EU and other countries - including Japan, Korea, the United States and China - unanimously promoted "smart, inclusive and sustainable growth" by supporting a more resource-efficient, greener and competitive world economy.

But the outcome of the negotiations made these aims seem more like wishful thinking, with emerging economies fearing that green targets would put brakes to their economic growth.

Rio+20 produced no major agreement and the 100 leaders attending signed off on a conference document - The Future We Want - that was negotiated in advance and was seen by environmentalists as toothless.

EU focus on recycling and re-use

While getting all countries in the world to agree on resource-efficiency laws might prove a daunting task, Europe is being urged to lead the way by becoming a leader in recycling and re-use.

As Europe's raw materials are getting scarcer, consumers and industries continue to let them go to waste.

Richard Seeber, a German Christian-Democrat lawmaker in the European Parliament, says easing the recycling phase of products could make a huge difference in Europe.

"The EU is in need of a mind shift," Seeber said. "Our waste is sometimes even being shipped to other countries, such as China or Africa, where it is in some cases properly recycled, re-used, and even resold. This is absurd - we must improve the productivity in our recycling process!"

But recycling and re-use models are not the only solution. Products need to be efficient throughout their entire life-cycle, starting from their design phase.

The EU's Ecodesign directive could play an important role here, as it could set rules for easing the dismantling of used products, which could be then easily recycled in Europe.

"We cannot allow other countries to re-use our resources at our expense," Seeber said.

Umicore, a Belgian-based company which has emerged as a global leader in waste recovery and recycling, could not agree more.

"We believe that moving towards a resource efficient society should be seen as an opportunity. Recycling is not only one of the cornerstones to achieve a circular economy, it also allows for access to valuable and critical raw materials and the creation of growth and employment in the EU," it said in a statetment.

Commission official: Lack of resource efficiency rules hurts industry

The European Commission is working on turning resource efficiency into a political aspiration, by setting indicators to measure it and scoreboards for countries to compare their performance. This will help industry, says William Neale, responsible for resource efficiency in the Commission's environment unit.

William Neale is a member of cabinet in the European Commission's Directorate-General for the Environment. He spoke to EurActiv's Ana-Maria Tolbaru.

Is it hard to find the right indicators for measuring resource efficiency?

Absolutely, yes. It's very complex, a case of getting the right indicators. It's a difficult task, intellectually speaking.

Usually the metrics used for the existing policies are simple. For climate it might be, let's say, greenhouse gases, or for research we have clear targets - 3% of GDP going to research expenditure. They are rather precise. OK, they are selective to a certain extent maybe, but they it sum up rather easily. But when it comes to resource efficiency, it's not a simple metric anymore.

This is because we have so many different resources, so many different economic activities. There's an interplay between the different resources, so you might use more water in order to use less energy for example. There are so many complexities involved.

In the economy, normally the allocation of resources is by price and that has perhaps been the most efficient way of doing it so far because it manages the complexity. But because price doesn't always reflect the importance or the availability or the sensitivity of a particular resource, it's not always the best way of managing it.

So we need to have a better idea of, in terms of indicators, where the pressure points are and what we need to head towards.

But doesn't price stimulate savings when it comes to materials used? Water used, energy used, land used…?

Definitely. That is one of the main drivers… Price is good if it reflects the real value. For example, the big improvements in energy efficiency that we have seen recently are maybe partly coming due to the drive for improving the climate situation, but also it makes business sense and for individual households to reduce their energy consumption, because it is expensive. And it's going to get more expensive.

For other kinds of resources, that's for sure, for example for the German manufacturing industry. About 40% of their input costs is in materials. That's twice what they pay for labour. So of course if material prices are going up, it's obvious business sense for them to use the resources better, more efficiently and make them go further, get more out of them and waste less. So price is an important driver, but there are things like water that don't really have a price that reflects its scarcity, and scarcity can be regionally different.

And things like biodiversity which provides … very important economic services, some of which we don't realise until there is a disaster and think, well, if we hadn't dug up all those trees we wouldn't have had this flooding problem. And it costs a lot more to build flood defences out of concrete in terms of grey infrastructure than it would have done to keep that green infrastructure, but the value wasn't understood before.

So sometimes the price doesn't really reflect the value or the utility of the resources. And that's why we need to have an attempt to recognise the importance of those resources. Either by getting the price closer to their real value, or by having some kind of indicators or some kind of signals that show to the business community and consumers where that value is.

The lead indicator you have initially proposed in the roadmap has been highly criticised - I had a look at the responses given by stakeholders in the consultation that ended on 22 October.

Well it's highly criticised but we don't actually have one [lead indicator] yet. Because this is so complex we are having a very long expert discussion, a very long stakeholder discussion. We now have 170 replies to our stakeholder consultation…

So you can imagine, we are trying to analyse those and we are at the same time checking our own analysis.

There is one [indicator] which is being mooted quite frequently, which is the domestic material consumption compared to GDP.

Continued on Page 8

Continued from Page 7

That was the lead point?

This is one of the ones which is with the task force which is now looking into the possibilities that have been suggested. We haven't received the reports yet and it's still being developed.

There will be a meeting at the platform to get a further steer on this in December and it will be next year when the decisions are made.

But wasn't this proposed in the Roadmap, the lead indicator?

Yes, it was suggested in the Roadmap.

There are drawbacks from it. But it does also have certain advantages in that the information is there, the data is there, it's comparable between countries and so on.

I think that the main thing that we need to look at is whether we can reflect in that the importance of imports and exports. The resources embedded in products that are coming from Asia or America or wherever are not counted at the moment.

So we need to look at that. And we also need to look at the fact that domestic material consumption is very much based on weight, so platinum and gravel would have the same value.

So we can also think about it in terms of different sectors. Maybe it makes more sense to look at it sector by sector.

That is the work that's going on, and I'm not going to predict what is going to be the outcome.

But we certainly recognise that there are important drawbacks in the domestic material consumption model.

But it also has a lot of big advantages, because some of the others have even bigger drawbacks.

So it has the least drawbacks out of all the ones you have come across?

For a headline indicator, it has the beauty of sending quite a good political message.

Do you think that if you have one indicator that can be interpreted differently from one country to the other, as opposed to one indicator per material per sector...

Well the thing is that if you did that, it would no longer be a headline.

The idea of a headline indicator is that it gives a kind of political aspiration.

The idea really is to have something which is comprehensible, communicable and has strong enough data and methodology behind it to be credible and to allow comparisons. But it should be something which we can propose for the review of the 2020 Strategy, where we already have headline indicators for various areas.

In the current strategy we have a flagship on resource efficiency, and what we need to try to do is to show the direction we want to go in with resource efficiency. Just as we do with the 3% for research, or the employment - 70% of employed persons and so on - or in 20/20/20 for energy, you have those headline indicators which are also selective, they don't tell the whole story, but they show the direction we are trying to go in.

Like the indicative target in energy efficiency? So it's not binding but at least it's indicative?

I think for resource efficiency, we are all pretty much agreed that we need to de-couple resource use from growth.

Now, as resources are so complex, it's difficult to find an indicator to show that. Energy is a bit more easy, employment is a bit more easy, research is a bit more easy.

Continued on Page 9

Continued from Page 8

As it's so complex I think maybe the one that comes closest to that link of de-coupling resource use to growth is domestic material consumption to GDP. Because it has the GDP as the growth angle, and it has materials, which are a very important resource.

That is why it would fit in fairly well as a headline indicator. But of course we have to look at the negative sides of it, and the fact that it doesn't necessarily reflect in every way the way we want to go. There are other complexities around it.

So you're trying to reach a compromise solution?

And this is what the consultation is all about. This is what the expert groups have been working on. And now the European Resource Efficiency Panel, which has its working group looking at this. Which has a very strong participation of industry and the private sector, and also a couple of NGOs, academics and so on.

But it also depends on how you define resource efficiency. Because you could say this is the best way to measure resource efficiency, but actually some people define it differently.

Well, we took a very wide definition of resources in the resource efficiency flagship. So we include energy, biodiversity – it's not just materials. It's not just energy. It's water, it's biodiversity, because these things are all important because of environmental impact, and because of the interplay between them.

You can't really just concentrate on one. You might be missing what's really going on. You might really reduce material consumption but water consumption goes through the roof, and that has a bigger environmental impact, so you really need to treat it in a holistic way. Which is why it's intellectually difficult to reflect that.

But you need to have them there, because quite often if you can't measure it, or at least if you can't give an aspirational indicator of the direction you want to go, then it doesn't happen. Because the policies that are leading to it are not aware of that direction.

Industry is opposing indicators a lot ... what is their real worry?

Well, resources efficiency is talking about an economic and structural transition. And that involves winners and losers.

It involves pain. It's creative destruction.

You will have certain sectors and industries which will gain, and others which will lose.

We argue that the transition is inevitable, it's going to happen anyway because resources are under increasing pressure. We have the 9 billion population predictions, 3 billion new middle class consumers by 2030. Which is wonderful… it's new markets, new consumers and so on, but it will put a new pressure on resources which means we need to undergo this transition.

What we are also arguing is that by having indicators we are giving a clear signal to industry where it needs to invest in order to make that transition less painful. Because if we say this is the way things are going then companies, investors, funds and so on can start seeing that that is the writing on the wall. That gives increased confidence and predictability in the direction we need to go, rather than then hitting the constraints of supply, and the price volatility and hikes and so on.

It's really about helping industry and I think that by just having no clear direction that we need to go it's not helping industry.

We can't help industry by saying we can just carry on the way we want to carry on. That's really just killing industry by kindness.

Actually if you look at the industrial policy updates which Vice President Tajani had adopted in the Commission about eight weeks ago, you will see that the whole idea behind this sort of new approach to industrial policy is to try to channel investment more towards those future growth sectors, without the Commission picking champions, which is not really the idea. But at least to free up some of the obstacles to investment in those areas.

Things like green technology can be considered by investors to be more high risk, for example, and there is a lack of knowledge about the risks and payback periods and so on for those kinds of technologies, amongst venture capital fund managers and banks and so on.

So we need to address those particular issues, and in terms of resources efficiency we want to get the stakeholders together to actually consider that.

Is it a normal practice to get investors together to consider different options?

I'm sure it's been done for other areas. If you look at some of the other areas in the industrial policy communication, some of the other sectors with greatest potential, it's things like biotech and so on, and I'm sure there would be no harm done in bringing investors together around those areas also.

But for resource efficiency we're talking about a major economic transition. We've always said that it's not for the Commission alone to do. We can provide the signals, but in the end it's going to be the private sector which has to adapt and change and take on that transition.

And it is investors who will drive that as well.

And I think the EIB for example is very aware of the discussion we're having on resource efficiency.

Old airplanes find an afterlife as recycled resource

Aircraft makers are increasingly turning to retired airplanes as a source of metals and other materials that can be recycled, possibly to fly again in new generations of aircraft.

With 12,000 passenger planes due to be retired over the next 20 years, rising prices for metals and other components are giving manufacturers an incentive to recapture materials from old hulks, thousands of which are already parked in deserts, left to decay near landing strips or cannibalised for parts.

Aircraft do not fall under EU disposal rules as cars and ships do. But by stepping up recycling and reuse efforts, the industry appears to be delivering on the EU's resource-efficient Europe 2020 strategy to reduce the environmental footprint of manufacturing and dependence on imports of raw materials – including cobalt, titanium, aluminium and nickel used in planes.

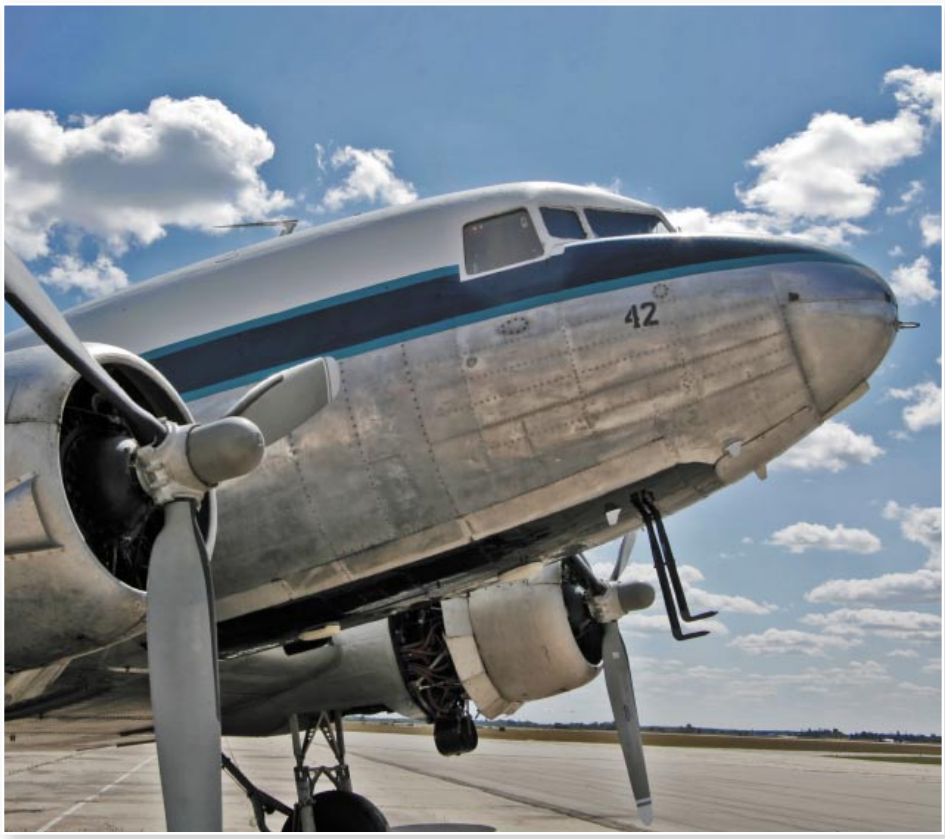
European giant Airbus and its American competitor Boeing eventually hope to reclaim 85% to 95% of aircraft parts, metals and other materials from retired models, and several producers of regional jets – such as Europe's Fokker, Brazil's Embraer and Canada's Bombardier – have committed to do the same.

"A few years ago when the industry was in a depressed economic condition and most of the scrapping yards were full of waste … and the value of materials were very low," said Olivier Malavallon, who is in charge of end-of-life aircraft management for Airbus.

"Now there are quite increased and there is a strong interest in reusing as much as possible wastes, such as aluminium, by the industry into new aircraft manufacturing," Malavallon told EurActiv by telephone.

Some industry efforts are not new: Airlines and manufacturers have long stripped reusable parts and components – like landing gear, tyres and electronics – from retired planes. Metals have been broken up and sold for scrap for use in other industries.

What is more novel is an industry-wide effort to improve standards and safety, while constructing tomorrow's aircraft using more recycled and recyclable materials.



Mining revenues and metals

The aviation industry has more than altruistic reasons to make the shift: Cash-strapped airlines want to squeeze every cent out of planes, even when they retire them. And manufacturers have a vested interest in seeking new and more affordable raw materials to handle an expected surge in aircraft production over the next 30 years.

Metals prices have slipped in recent months, but the World Bank forecasts that rising fuel costs and demand in China – which consumes 43% or the global metals production – will mean higher prices for many metals in the near term.

Three years ago, said Malavallon, "the value of aluminium and titanium were so low that as soon as you started cutting the aircraft you were losing money. Today the situation has changed."

Plane manufacturers are also under mounting pressure from regulators and customers to produce aircraft that are quieter, more fuel efficient and more sustainable. They are quick to publicise the environmental benefits of end-of-life recycling:

- Airbus, for example, estimates that recycling an airplane's aluminium is 90% more energy efficient than raw production.
- Recycling and re-use help lower exposure to supply vulnerability of rare earth metals, titanium and other core materials that are derived from growing competitors such as Russia and China, or conflict-prone regions

Continued on Page 11

Continued from Page 10

in developing countries.

- Recycling also reduces the population of abandoned planes at airports or old military sites that are not just eyesores, but potential environmental hazards.
- The Aircraft Fleet Recycling Association, or AFRA, was created in 2005 and only recently have manufacturers become more aggressive in shifting to materials in airplane seats, carpeting and other furnishings that can one day be recycled.

Safety first

Still, the end-of-life re-use has its limitations. The precision required in constructing frames, bodies and engine parts still requires virgin alloys or raw metals, said Derk-Jan van Heerden, managing director of Aircraft End-of-Life Solutions (AELS) B.V. in the Netherlands, one of the few EU companies specialising in aviation parts and recycling.

"In the aviation sector there is one thing that is more important than everything, and that is safety," van Heerden told EurActiv in a telephone interview. "We have very, very strict quality systems in place, and therefore all the material that enters the production process needs to be of a certain quality and there [can be no or] very, very small deviations from the standards that are agreed."

The market is another challenge for the handful of European companies that recycle old metals. A more relaxed regulatory environment and lower overall costs make the United States the main destination for airplane disassembly and recycling – van Heerden estimates that three-in-five end-of-life aircraft in Europe "flies outside of Europe."

Life after retirement

Passenger aircraft typically have a 25-year service life. Once retired from passenger fleets, some are converted for cargo use, others stripped of parts that are still useful.

More controversially, aircraft nearing the safe end of their lives are sold to developing countries. Sub-Saharan Africa, which has the world's worst aviation safety record, was historically a dumping ground for ageing aircraft bought on the cheap by African national carriers.

That is changing. The International Civil Aviation Organization is supporting the Africa Strategic Improvement Action plan to work on air safety and modernisation. Meanwhile, western aircraft manufacturers have keen on working with African carriers to finance modern fleets. Ethiopian Airlines, for instance, was among the first in the world to take delivery of Boeing's new 787 Dreamliner series.

These developments mean that older planes are heading to the graveyard rather than to developing markets.

Since AFRA was founded in 2005, its members have dismantled more than 7,000 aircraft. While the numbers are small compared to generations of scrapped planes lying around the world, the organisation sees significant potential.

"It has been calculated that the market for aircraft parts is approximately $2 billion [€1.55 billion], but it is AFRA's firm belief that even greater financial value can be extracted from end-of-life activity," explains the website of the Washington, DC-based organisation.

The hazards of disposal

Officials at Airbus and Boeing say their newest aircraft are designed with a recyclable afterlife in mind.

Still, there are problems and dismantling aircraft is not entirely free of hazards. Batteries, asbestos, chemicals in fire-retardants, high-pressure oxygen systems and furnishing materials pose potential health and environmental risks if not properly handled – and the cost of doing so make it easier to dump components than recycle them. AFRA establishes guidelines for its members for the safe disposal of waste products that in many cases are not governed by law.

The EU, for example, does not set recycling mandates for aircraft the way it does for cars and ships. The EU is preparing to tighten regulations on ship recycling to prevent the dumping of old hulks in developing countries.

There are other potential hazards. The newer, more durable and lighter materials like carbon fibre being used in today's aircraft production also could have long-term environmental drawbacks.

"Although using recycled carbon fibre is far less energy intensive and hence less expensive, the facilities able to recycle on a commercial basis are few and far between. The expensive alloys found on engines such as nickel and cobalt also require highly specialised facilities," notes the International Air Transport Association, an industry trade body.

"The resins they contain are nearly impossible to dispose of cleanly," IATA also notes.

Aircraft graveyards are scatted across the desserts of the Southwestern United States, from Texas to Arizona and California. One of the largest – the 'bone yard' – is located near Tuscon, Arizona, where more than 4,000 military and civilian aircraft are parked in an area equivalent to more than 1,400 football pitches.

Despite the thousands of aircraft due to be retired in the decades ahead, the metals than can be recovered from old planes is negligible – what Airbus' Malavallon calls a "drop in the ocean" compared to automotive metals.

At Aircraft End-of-Life Solutions in the Dutch town of Delft, van Heerden estimates that melting down several hundreds airliners produces 60,000 metric tonnes of aluminium, while a typical an aluminium smelter needs a minimum 150,000 to 200,000 metric tonnes to be profitable.

"If you would collect all aircraft aluminium that is recycled in one place in the world, you would not even have enough to operate an aluminium smelter," he said.

Waste expert: Recycled products 'faced with the REACH regulation'

Although the REACH law on chemicals does not cover waste as such, it does affect recycled products which rely on secondary raw materials extracted from waste. At the end of the day, recycling companies might find it difficult to comply, holding back the EU's drive to consume less raw materials, says Wobbe van der Meulen.

Wobbe van der Meulen is environmental policy and reporting manager at SITA NEWS (Northern Europe Waste Services), a waste management and recycling company that is part of the Suez Environment group. He spoke to EurActiv's editor Frédéric Simon.

How does REACH impact your business?

REACH is not directly affecting our company because waste is outside the scope of REACH.

However, the EU is moving towards a recycling society because of raw materials scarcity in Europe and its dependency on other regions of the world. And that's one of the reasons why the EU came up with end-of-waste criteria.

If you recycle up to an end-of-waste status, it means you're getting a product. And if you have a product and you put it on to the EU market, then you have to comply with the REACH regulation.

At what stage does waste become a product?

End-of-waste criteria define the border between waste and product. At EU level, there are end-of-waste criteria for metals for instance. For plastics, they're working on it.

So if you meet the end-of-waste criteria, then your recycled waste qualifies as a product and you're faced with the REACH regulation.

But the REACH regulation was written for the chemical manufacturers and when the regulation came into force there were no existing detailed provisions to deal with end-of-waste products.

Unlike a primary process in the chemicals industry, which has clearly defined raw material inputs, a recycling process has to deal with a wider range of input compositions, especially when dealing with post-consumer waste.

In this regard, REACH compliance is more constraining for recycled than for primary substances, and this is a constraint for the secondary materials market.

Fair competition between primary and secondary raw materials should prevail – for example by evaluating the environmental burden associated to primary resource extraction, procurement and conversion.

The recycling industry has had many discussions with EU representatives and ECHA to establish a sound procedure for products originated from waste.

How can that problem be solved? Do you think secondary raw materials should be exempted from REACH?

There is no full exemption from REACH obligations, but end-of-waste products are exempted from registration provided that the substance has the same composition than the registered substance that was originally put on the market. If this provision was not created, many secondary raw materials would have been excluded from the recycling market.

Another problem is related to REACH's list of substances of very high concern, or Annex XIV of REACH. If you produce or import a (secondary) raw material, you have to comply with the list of substances of very high concern, which is drawn up by the European Chemicals Agency [ECHA] in Helsinki on behalf of member states.

So you have to know the origin and composition of the incoming waste and sometimes make an analysis on your post-consumer recycled material. Our recycling industry is therefore more and more relying on quality controls.

So how do you comply in practice? As a company, I suppose you have to provide this information...

It's just starting now, end-of-waste criteria are being developed at EU and national levels recently.

Metals are easier to deal with because recycled metal has a more consistent quality than recycled post-consumer plastic for instance. In recycled plastics, you may find substances which were on the market 40 years ago but are currently phased out. And so there is not much experience with how to comply.

The availability and reliability of data is essential. Databases can be developed for instance at company level or within a sectoral branch organisation.

But one needs to find a pragmatic way to ensure that a specific batch of secondary

Continued on Page 13

Continued from Page 12

raw material does not contain substances of very high concern. Because you cannot analyse every batch. And that's why industry and the European Commission have to think about a practical solution.

Are you saying you are in a sort of regulatory black hole?

If it becomes too complex to comply with REACH criteria for secondary raw materials, then they will remain under a waste status.

We are willing to promote further recycling and implement the five-step waste treatment hierarchy. However, more consistency between regulations and better implementation are needed.

REACH chemicals law hampers EU recycling goals

The REACH chemical safety regulation is creating headaches for recycled products manufacturers, hampering the European Union's efforts to decrease its reliance on imported raw materials. The European Commission has only begun acknowledging the problem, saying it will take time to address.

REACH was adopted in 2006 with the objective of protecting consumers' health and the environment by obliging chemical companies to screen and eventually phase out the most harmful substances on the market.

In the EU's firing line are chemicals that cause cancer, birth defects or which accumulate in human bodies and in the environment – so-called substances of very high concern.

But while the law is expected to improve the environment, it is creating headaches for manufacturers who rely on waste as a secondary raw material, another EU environmental policy objective.

"If you recycle up to an end-of-waste status, it means you're getting a product," said Wobbe van der Meulen, environmental policy manager at SITA, a waste management and recycling company based in the Netherlands.

"And if you have a product and you put it on to the EU market, then you have to comply with the REACH regulation," he told EurActiv in an interview.

The problem with using recycled products as raw materials – especially plastics – is that they may contain chemical substances that are no longer authorised in Europe because of REACH.

"In recycled plastics, you may find substances which were on the market 40 years ago but are currently phased out," van der Meulen explained.

"And so there is not much experience with how to comply [with REACH]."

EU acknowledges conflict between REACH and recycling

Bjorn Hansen, head of unit at the European Commission's environment directorate, acknowledged that the REACH regulation could pose problems for recycling.

"When negotiations began on end-of-waste criteria, there was no REACH," Hansen told a conference organised in Brussels by German chemical giant BASF on 6 September.

"And indeed this means that products that get out of waste with the end-of-waste criteria are in competition with virgin material," he said in reply to a question from SITA's van der Meulen about the potential conflict between REACH and recycling.

Hansen indicated that the Commission was working to "ensure that the interface [between REACH and recycling] works well in the future." However, he admitted that the process "will take time"

"It's a very important point that requires careful thought and long-term planning," Hansen said. "It's part of the resource-efficiency roadmap and the chemicals aspect of it, so it's important."

REACH: Thwarting resource-efficiency?

By making the connection with the EU's resource-efficiency agenda, Hansen is touching a raw nerve.

The European Commission's Roadmap to a Resource Efficient Europe, adopted in September 2011, suggested decoupling the EU's economic growth from raw materials

Continued on Page 14

Continued from Page 13

consumption. Supporting low-carbon growth, green innovation and recycling were all mentioned as key objectives.

But the EU's own REACH regulation could make those harder to attain.

Justin Pugsley from JJP Associates, a London-based PR firm, says the 2nd and 3rd phases of REACH will impact many minor metals and rare earths, which are traded in very small quantities but are critical to the very same high-tech eco-industries the EU wants to promote.

"The problem is that REACH registration will be so expensive, it may become pointless keeping manufacturing based on these substances in Europe as no other jurisdictions are considering anything quite so draconian for these materials," Pugsley said.

"It would be a shame for the EU to score home goals in this way and give an advantage to competitors in the US and Asia."

Veronique Steukers of the Nickel Institute warned that REACH would come into direct conflict with other EU environmental policy objectives if it ended up restraining the use of metals that are needed in green technologies such as batteries for electric vehicles or solar panels.

"On chemicals management there are potential conflicts – substances which can be useful like metals are put on the [REACH] list without understanding that

they are key to sustainability solutions," Steukers said.

Secondary raw materials priced out of the market

For a waste and recycling company like SITA, complying with REACH may simply prove too expensive to be worthwhile.

End-of-waste products may be exempted from REACH obligations provided they have the same chemical composition as products which have already been authorised by the European Chemicals Agency (ECHA) in Helsinki.

Concretely, this means companies like SITA would need to take out every single batch of secondary raw materials extracted from consumer waste and analyse them to check whether they contain dangerous chemical substances.

The health and environmental motives for doing so are evident. But this process inflates the cost of recycled raw materials and may end up pricing them out of the market.

"You have to know the origin and composition of the incoming waste and sometimes make an analysis on your post-consumer recycled material," van der Meulen explained. "In this regard, REACH compliance is more constraining for recycled than for primary substances, and this is a constraint for the secondary materials market."

At the end of the day, it might make more sense economically to keep waste in landfills instead of recycling or re-using it like the European Commission would like to see.

"If it becomes too complex to comply with REACH criteria for secondary raw materials, then they will remain under a waste status," van de Meulen said.

"And that's why industry and the European Commission have to think about a practical solution."

Eurometaux chief: No rush job on resource efficiency

Metal industries want EU member states to implement legislation on waste, recycling and sustainable development. At the same time, they are concerned about the loss of profits resulting from "rushed" laws that could force them to do business outside Europe, says Oliver Bell.

Oliver Bell is president of Eurometaux, the European umbrella association for the non-ferrous metals industry and raw materials companies. He provided written responses to questions from EurActiv's Ana-Maria Tolbaru.

Continued on Page 15

Continued from Page 14

Industry fears that if the EU sets too strict rules on resource efficiency, they will be forced to move their activities abroad. What is your view?

This might indeed be the case. Fear is also in this case a bad advisor. Back to facts, the resource efficiency indicators currently under discussion are mainly based on quantities of raw materials in relation to the gross domestic product - for example DMC [domestic material consumption].

Unfortunately these indicators worsen if the gross domestic product decreases, e.g. due to economic downturn, while the use of raw material stays the same. If these kind of indicators drive policy, it could imply that energy intensive companies relocate abroad.

This would lead to an improved resource-efficiency ratio for the given country even though the amount of material used remains the same. A proper indicator for resource efficiency also considers the metals invested and bound into the infrastructure. The current indicator wrongly classifies these investments in stock as "consumption", therefore underrating resource efficiency.

What countries are friendlier to business when it comes to resource efficiency regulations?

Many countries are in the process of developing resource-efficiency programmes. It is still difficult to have a complete overview. However, there are low-hanging fruits for enhancing resource efficiency which can be easily harvested if we resolutely implement existing legislation.

For example, there is much to gain if we improve the control of illegal exports of end-of-life products and other waste which contain valuable material. In many cases, recycling outside the OECD means high losses in raw materials compared to recycling in modern EU recycling plants.

A global certification scheme for recycling could contribute to preventing those losses. Taxes on raw materials are not efficient since they further increase high material costs as well as decrease the competitiveness of the most efficient companies in the EU. Finally, compulsory recycled contents in products are misleading since they just divert scarce secondary raw materials from one application to others without improving recycling.

A recent report from Harvard Business School found that resource-efficient companies tend to produce higher investment returns than their less resource-efficient rivals. What do you think about these findings?

This study does not indicate which companies have been included. Especially the resource- and energy-intensive basic industry relies on a systematic comparison along the value chain. It is important to compare like with like, and not to compare light with heat.

Metals industry should be compared with metals industry and not with the service or consumer goods industry. This is a foremost necessity. The metals industry is permanently forced to utilise high-priced raw materials in an efficient way to survive international competition.

There are many examples of highly innovative efficiency technologies. An excellent overview of best-practice examples is provided by the company initiative 'Metals pro Climate'. It is an honour to chair this initiative and present our modern base-material-driven industry as a problem solver. However, standard "one-size-fits-all" solutions are in most cases not achievable.

Our experience shows that improvements in resource efficiency are always a combined result of scientific, technical, economic and environmental consideration and integration. In many cases lifecycle analysis even shows that a higher resource input is needed to make resource efficiency gains possible during the use phase of products.

Do you think that industry can regulate itself through natural competition? Would legal benchmarks not stimulate investments in resource efficiency measures?

The metals industry is increasingly compelled by market forces to utilise high-priced raw materials in an efficient way in order to survive international competition. Before setting benchmarks we need consensus on how to correctly measure resource efficiency. This process is important but needs some more time.

Even if sustainability is an important criterion for investments, we should accept that profit is nevertheless an important one, too. And last but not least CSR [corporate social responsibility] should follow facts and figures - [and] investors should be able to compare like with like.