Obstacles and chances of resource politics in the Czech Republic

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Introduction: Resource use issues in the Czech Republic

- Implementation conceived as a sequence of: Research ⇒ Statistics ⇒ Environmental and sustainability reporting ⇒ Environmental and sustainability policy

- Research: since 2000 as an important issue from the viewpoint of sustainable development, carried out by Charles University Environment Center (CUEC)

- Statistics: since 2004 when the issue became internationally recognized enough and mature for routine statistical surveys

- Reporting: since 2005 promoted by academic sphere, availability of official data and demand from international organizations (OECD, Eurostat)

- Policies: „Old-fashioned" resource use policies are well-established, policies covering new topics are emerging

Research activities (1)

- Input material flows: Raw material equivalents of foreign trade (RMEs)
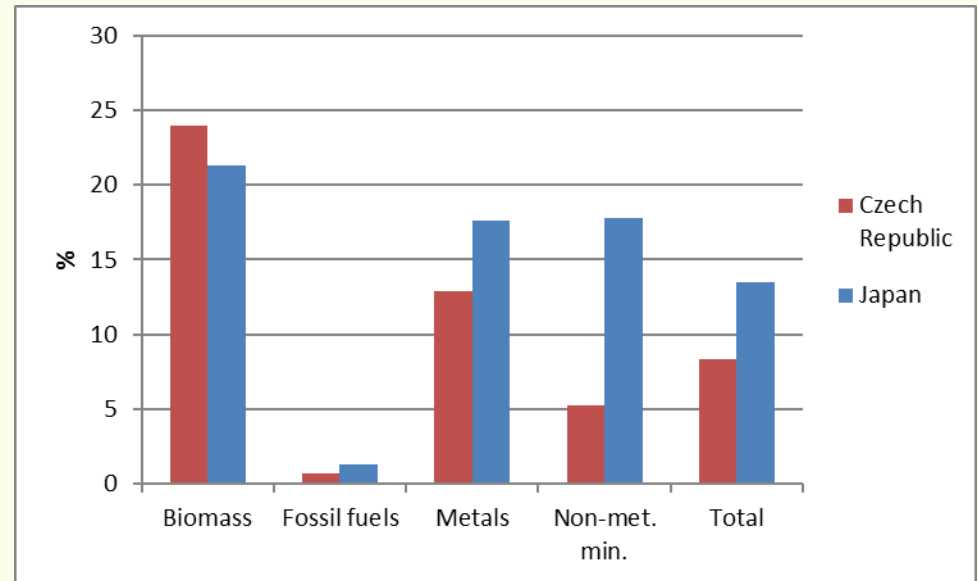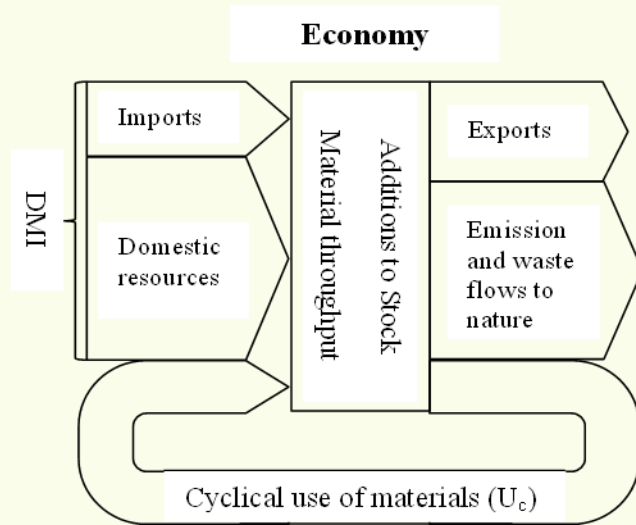- Method: Input-output modeling and LCA
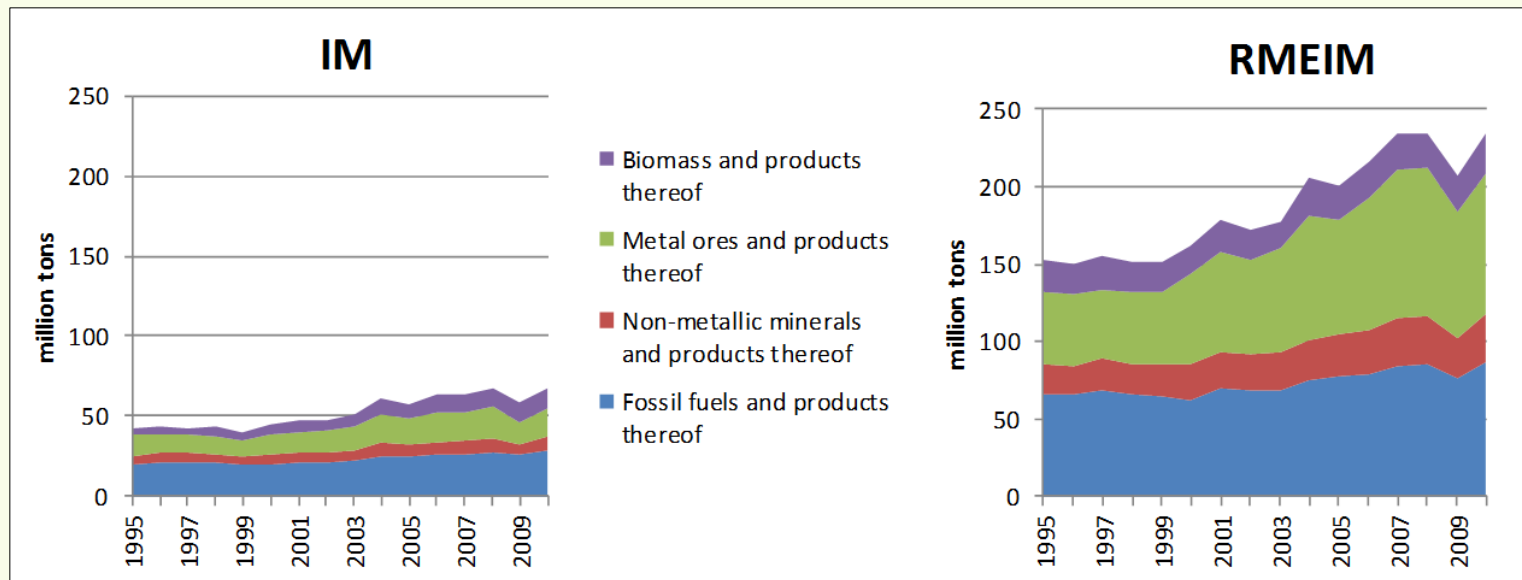
Import (IM) and raw material eqivalents of import (RMEIM), Czech Rep. 1995-2010

Research activities (2)

- Circular economy: Indicator of cyclical use rate
- Based on a concept introduced in *Japanese Fundamental Plan for Establishing a Sound Material-Cycle Society* (2003)
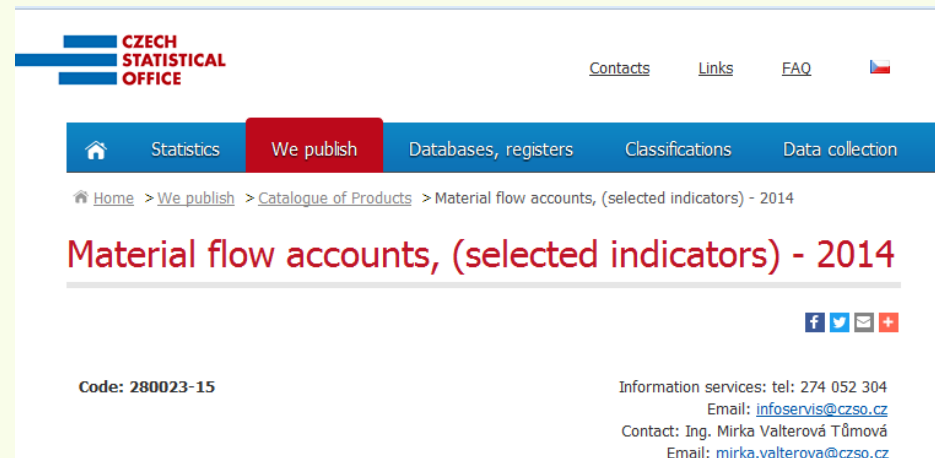
Indicator of cyclical use rate, Czech Republic and Japan, 2007

Statistics: Activities of CZSO

- Resource use first treated in the Eurostat grant under Multi-beneficiary Statistical Co-operation Programme (2004-2005)

- CZSO established a cooperation with CUEC, took over its data, validated them and extended the time series

- First edition of thematic publication on material flows published in 2006 (DMI, DMC and PTB indicators), regular yearbook since 2008

- Publication of MFA data had begun before it was mandatory from Eurostat

Waste and material flows

34/ Domestic material consumption

KEY QUESTION →

Is the environmental burden associated with the extraction and consumption of materials decreasing in the Czech Republic?

KEY MESSAGES →

The domestic material consumption is decreasing in the Czech Republic; it decreased by 13.9%[1] in the period 2000–2013. The consumption of fossil fuels, especially of coal and oil is decreasing. The environmental pressures associated with the extraction and consumption of raw materials are therefore being reduced.

DRIVING FORCES
- Industrial production
- Energy intensity of the economy
- Fuel consumption by households
- Electricity and heat generation

RESPONSE
- Renewable energy sources
- Total environmental protection expenditure
- Public environmental protection expenditure

PRESSURE
- Greenhouse gas emissions
- Emissions of acidifying substances
- Total waste generation

IMPACT
- State of animal and plant species of Community importance in 2006 and 2012
- State of natural habitats of Community importance in 2006 and 2012

STATE
- Air quality in terms of human health protection
- Air quality in terms of the protection of ecosystems and vegetation

– Report on the Environment in the Czech Republic (yearly since 2006)

Progress Report on SD Strategy of the CR

Latest edition (2015) included both national domestic material consumption (DMC) and material footprint of households taking into account RME

Material footprint of households, Czech Republic, 2012
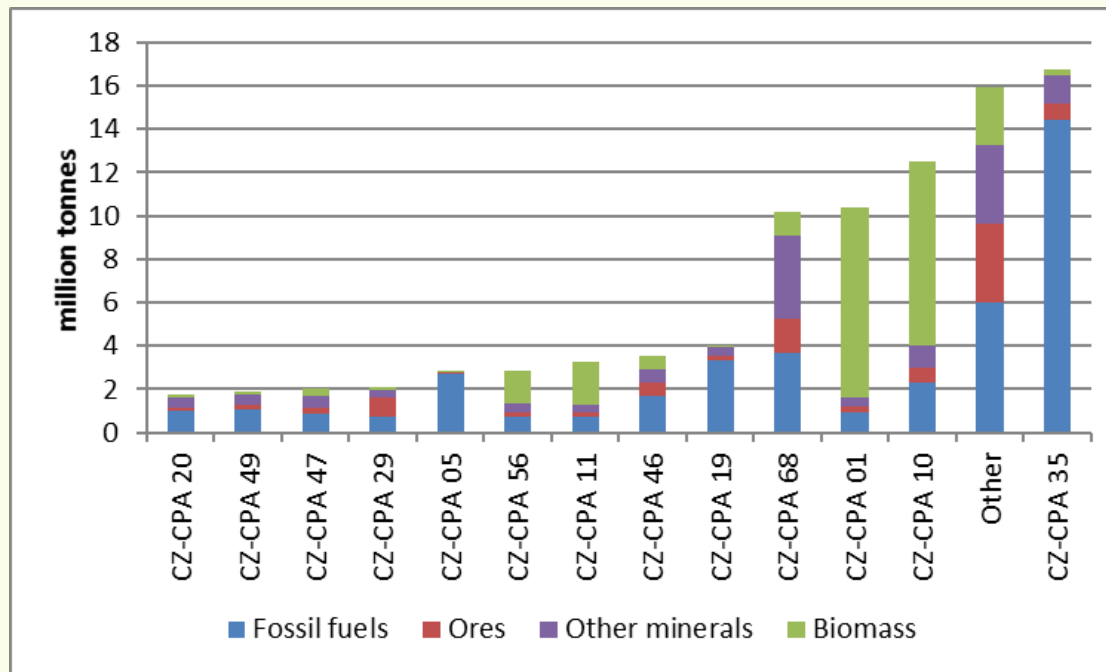
Largest material footprint is related to electricity and gas (CZ-CPA 35), food and agricultural products (CZ-CPA 01 and 10) and real estate services (CZ-CPA 68)

Resource Conference Vienna "Prosperity without Growth of Natural Resource Use", November 21, 2016

Report on the Environment in the CR

Focus on national domestic material consumption (DMC) and material intensity
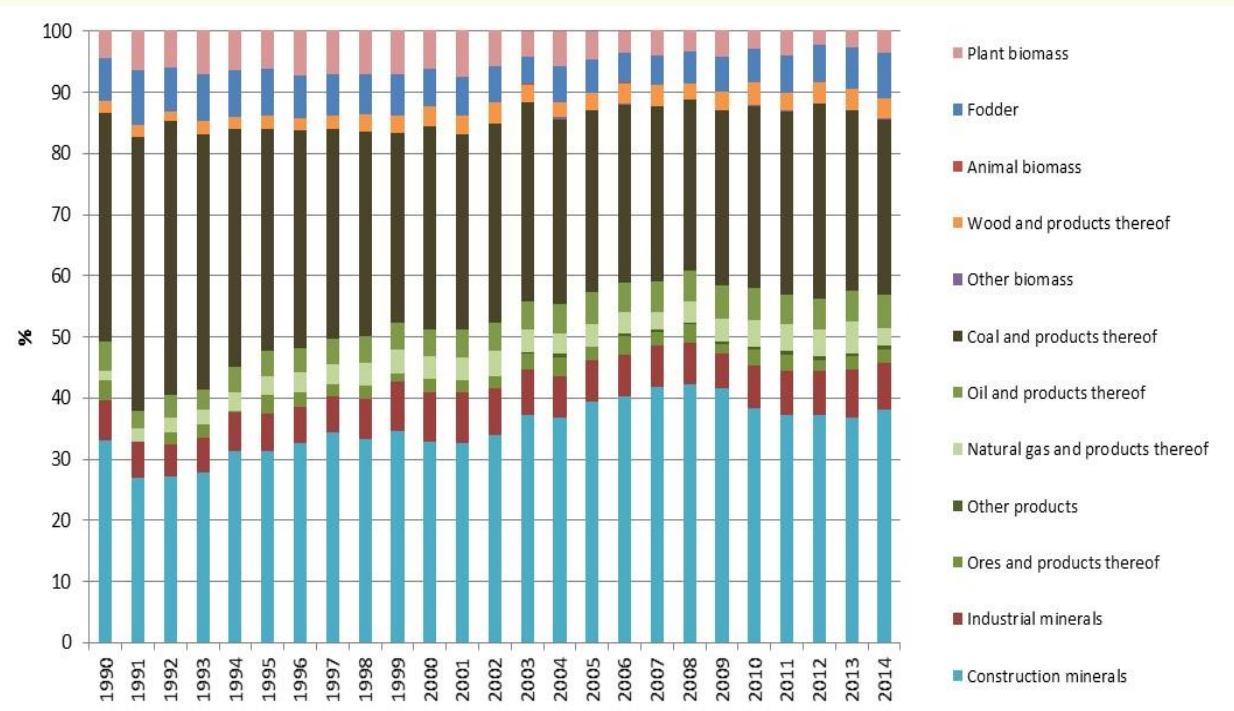
Decrease in use of coal, increase in use of natural gas and construction minerals. No increase in use of renewables materials.

Domestic material consumption (DMC), Czech Republic, 1990-2014

Resource Conference Vienna "Prosperity without Growth of Natural Resource Use", November 21, 2016

Environmental and sustainability policies (1)

- Since the beginning of 1990s there has been a number of well-established „old-fashioned" resource use policies
- Focus on traditional themes such as securing raw materials, environmental impacts related to raw material extracion and waste management including minimization of waste and promotion of recycling., etc.
- Recent examples:
    - The Raw Material Policy in the Field of Mineral Materials and Their Resources (2014)
    - Secondary Raw Material Policy (2014)
    - Waste Management Plan 2015-2024
    - State Environmental Policy 2012-2020

Environmental and sustainability policies (2)

Ecological territorial limits for brown coal mining in Northern Bohemia

- – Established in 1991

- – „Opening" the limits in 2008 and 2015 even though studies showed a significant external costs related to further brown coal mining

Environmental and sustainability policies (3)

New topics:

- Integrated assessment of material inputs and outputs:
  (no decrease in waste flows without decrease in material consumption)

- Assessment of physical stocks
  (increase in physical stocks means an increase in future waste flows

- Shifts in environmental pressures and impacts between countries
  (issue of environmenal equity and justice)

- Assessment of impacts over production chains
  (footprinting): consumption can have far-reaching consequences in other countries

Environmental and sustainability policies (4)

- New topics – developed in a few publications/policies without any impact on real policy making due to low policy support
- Examples:
  - Sustainable Development Strategy (2004) and Strategic Framework for Sustainable Development (2010)
  - Framework Programme for Sustainable Consumption and Production (2005)
  - Green Growth in the Czech R.: Selected Indicators (2013)
- Revision of Sustainable Development Strategy is currently under way: So far there has been strong policy suport for it
- New topics are covered by work of a number of NGOs and private companies

CARBON FOOTPRINT OF A COMPANY

Basic characteristics

Carbon footprint of a company is a measure of impact of company operations on the environment and in particular on climate change. It is an indirect indicator of the consumption of energy, products and services. The carbon footprint measures the amount of greenhouse gases which corresponds with the activities or products of the company. The carbon footprint, besides the company quality level, can be designated at other levels – national, municipal and individual. Currently it is measured and recorded by thousands of companies abroad and dozens of companies in the Czech Republic, mainly subsidiaries of multinational companies. The determination of the carbon footprint is beneficial for any company which does not ignore the impact on the environment and modern „green" image.

The main reason for establishing the company's carbon footprint is in practice a request from a client within the supplier-customer relationships (calculation crosswise the entire chain of companies), the decision of the parent company or marketing use of the carbon footprint.

Standards

Area of reporting greenhouse gas emissions from companies codifies Standard ISO 14064 – Greenhouse gases. Another internationally used standard is the GHG Protocol – corporate standard for measuring and reporting carbon footprint, used especially in Anglo-Saxon countries, while in the francophone region is an established method Bilan Carbon® and for product reviews method PAS2050 is used. These standards represent a general framework, according to which the determination of emissions and sinks of greenhouse gases is carried out as well as the carbon footprint calculation. The specific procedure is necessary to determine, depending on the type of a company and its processes.

Carbon footprint

Certification and verification of calculation

The standards also define the procedure for verification of the calculations. The company CI2, o.p.s. offers the possibility of calculating the carbon footprint of a company or product according to given standards, depending on the client´s requirements. Following the calculation we provide an official certificate, which is valid for one year. Then, the process of calculation and certification can be carried out again. The calculation procedure is in accordance with the GHG Protocol (www.ghgprotocol.org). Externally it is possible to convey the verification of calculation by a third party – internationally recognized verification agency.

Thumbnail of the certificate issued by organization CI2, o.p.s - Tiscali.Media., a.s. (2013)
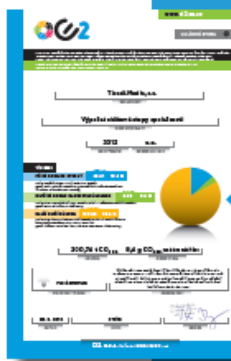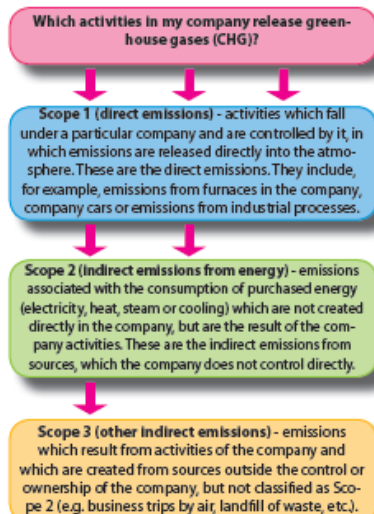
Measures to reduce carbon footprint

A part of the calculation of the carbon footprint is to identify its composition not only in terms of scopes, but also the factors which produce the most greenhouse gases. These factors, in the case of the client´s interest, will be focused on concerning suggestions of measures to reduce the carbon footprint, including an estimation of their financial costs.

Scopes

Calculating the carbon footprint of a company is divided, according to the place of emissions into three categories:

Which activities in my company release greenhouse gases (CHG)?

Scope 1 (direct emissions) - activities which fall under a particular company and are controlled by it, in which emissions are released directly into the atmosphere. These are the direct emissions. They include, for example, emissions from furnaces in the company, company cars or emissions from industrial processes.

Scope 2 (indirect emissions from energy) - emissions associated with the consumption of purchased energy (electricity, heat, steam or cooling) which are not created directly in the company, but are the result of the company activities. These are the indirect emissions from sources, which the company does not control directly.

Scope 3 (other indirect emissions) - emissions which result from activities of the company and which are created from sources outside the control or ownership of the company, but not classified as Scope 2 (e.g. business trips by air, landfill of waste, etc.).

Scheme of division of greenhouse gas emissions from company activities according to scopes.

Reasons for determination of carbon footprint of a company

- **Cost saving** – identifying, which part of your activities consumes the most energy and resources and where you can look for cost reduction.
- **Risk reduction** - Preparing for the rising prices of fossil fuels and their inclusion into business planning.
- **Expansion of the business** – cost saving leads to increased competitiveness and expansion of your business.
- **Green marketing** – satisfy the growing number of customers who are interested in your impact on climate and environment.
- **Corporate commitment** – whether you are a small business or a large company, „green commitment" is more and more integrated into corporate strategy.
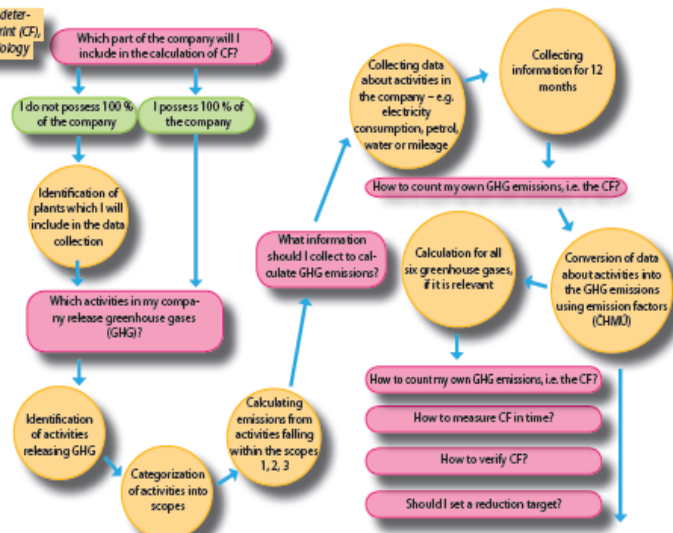
The calculation procedure

- **Step 1** - determining the limits of calculation – what part of your business we will include in the calculation, what part of the production and sales cycle of products, etc.
- **Step 2** - determining the activities which release greenhouse gases (e.g. electricity consumption, transport, waste production).
- **Step 3** - data collection – for each activity identified in step 2 it is necessary to collect data on an annual basis.
- **Step 4** - Transfer of active data on greenhouse gas emissions using emission factors.
- **Step 5** - Identification of measures to reduce emissions.

References

- Tiscali Media, a.s.
- Carbon footprint of the towns: Chrudim, Jilemnice, Krnov, Praha Libuš, Semily, Svitavy

Scheme of procedure for determining the carbon footprint (CF), according to the methodology CI2, o.p.s.

- Which part of the company will I include in the calculation of CF?
- I do not possess 100 % of the company
- I possess 100 % of the company
- Identification of plants which I will include in the data collection
- Which activities in my company release greenhouse gases (GHG)?
- Identification of activities releasing GHG
- Categorization of activities into scopes
- Calculating emissions from activities falling within the scopes 1, 2, 3
- Collecting data about activities in the company – e.g. electricity consumption, petrol, water or mileage
- Collecting information for 12 months
- How to count my own GHG emissions, i.e. the CF?
- What information should I collect to calculate GHG emissions?
- Calculation for all six greenhouse gases, if it is relevant
- Conversion of data about activities into the GHG emissions using emission factors (CHMÚ)
- How to count my own GHG emissions, i.e. the CF?
- How to measure CF in time?
- How to verify CF?
- Should I set a reduction target?

Target groups

- manufacturing companies
- Financial and banking sectors, IT, telecommunications
- Infrastructure companies
- Enterprises in the service

Links

- http://www.ci2.co.cz/en/what-carbon-footprint
- http://www.uhlikovastopa.cz
- http://www.ghgprotocol.org
- http://www.associationbilancarbone.fr

CONTACTS

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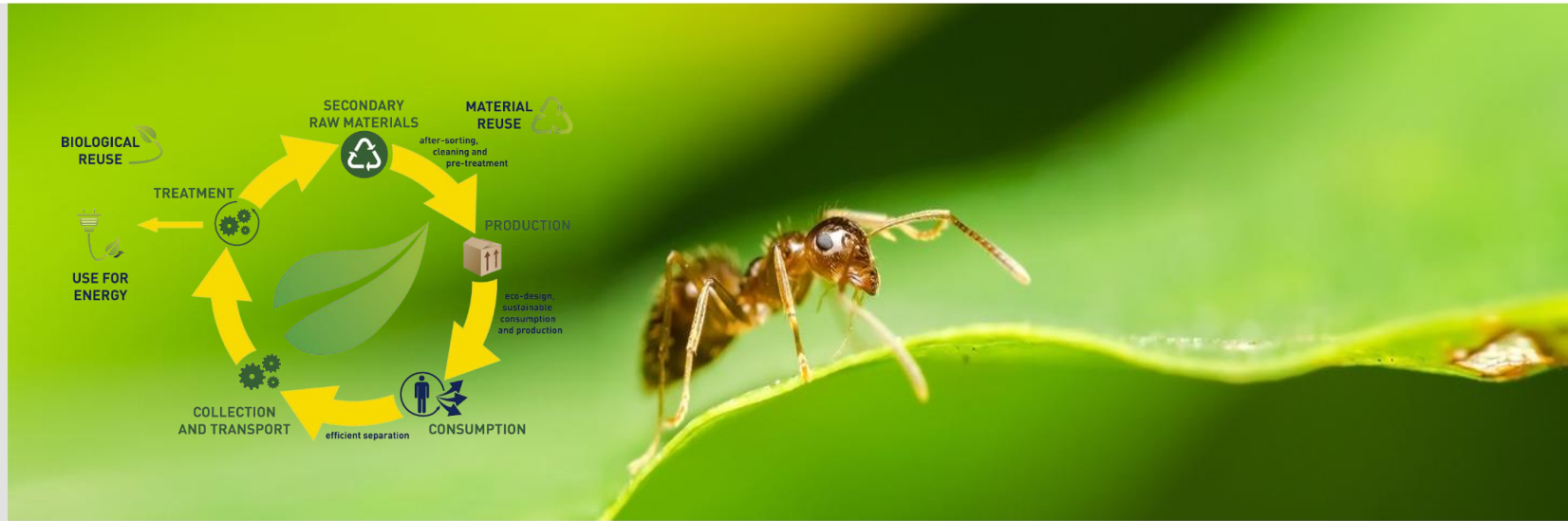Mgr. Josef Novák, Ph.D., phone: +420 736 162 066, josef.novak@ci2.co.cz

CI2, o.p.s. is a non-profit organization focused on sustainable development, education, publishing, and science and research. Its aim is to promote sustainable development in cooperation with public authorities, private sector, educational institutions and the public.

www.sita.cz/en/24984-circular-economy

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SECONDARY RAW MATERIALS

MATERIAL REUSE

after-sorting, cleaning and pre-treatment

BIOLOGICAL REUSE

TREATMENT

PRODUCTION

USE FOR ENERGY

eco-design, sustainable consumption and production

COLLECTION AND TRANSPORT

efficient separation

CONSUMPTION

LARGE BUSINESSES AND INDUSTRY / MUNICIPALITIES AND RESIDENTS / SMALL BUSINESSES / SERVICES AND HEALTH CARE

You are here: Circular Economy

SERVICES

PLANTS

VALUES

Circular Economy

Wastes are resources that can significantly help the European economy to get back on the path of green growth. Waste management sector plays a key role, responsible approach to waste management means the return of secondary sources and energy in production and consumption cycle. Circular economy ensures the protection of resources and the environment, job creation.

SITA becomes SUEZ

Obstacles and chances of resource use policies in the Czech Republic

- Proliferation of new topics from academia, NGOs and private sector
- Slow shift from a conservative policy making to a more modern one

- Inclusion of qantitative targets and indicators into policies is still limited
- Responsible institutions included in policies, but there are no other enforcement tools such as sanctions, fines, etc.

Thank you for your attention !

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