

New data in version 3.1

Changes from v2.2



Agroscope

User meeting, Basel,



2014.05.16



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Deputy Manager

ecoinvent Centre

The logo for ecoinvent Centre, featuring a large red arc that encircles the text. The text "ecoinvent" is in a bold, black, sans-serif font, and "Centre" is in a smaller, black, sans-serif font below it.

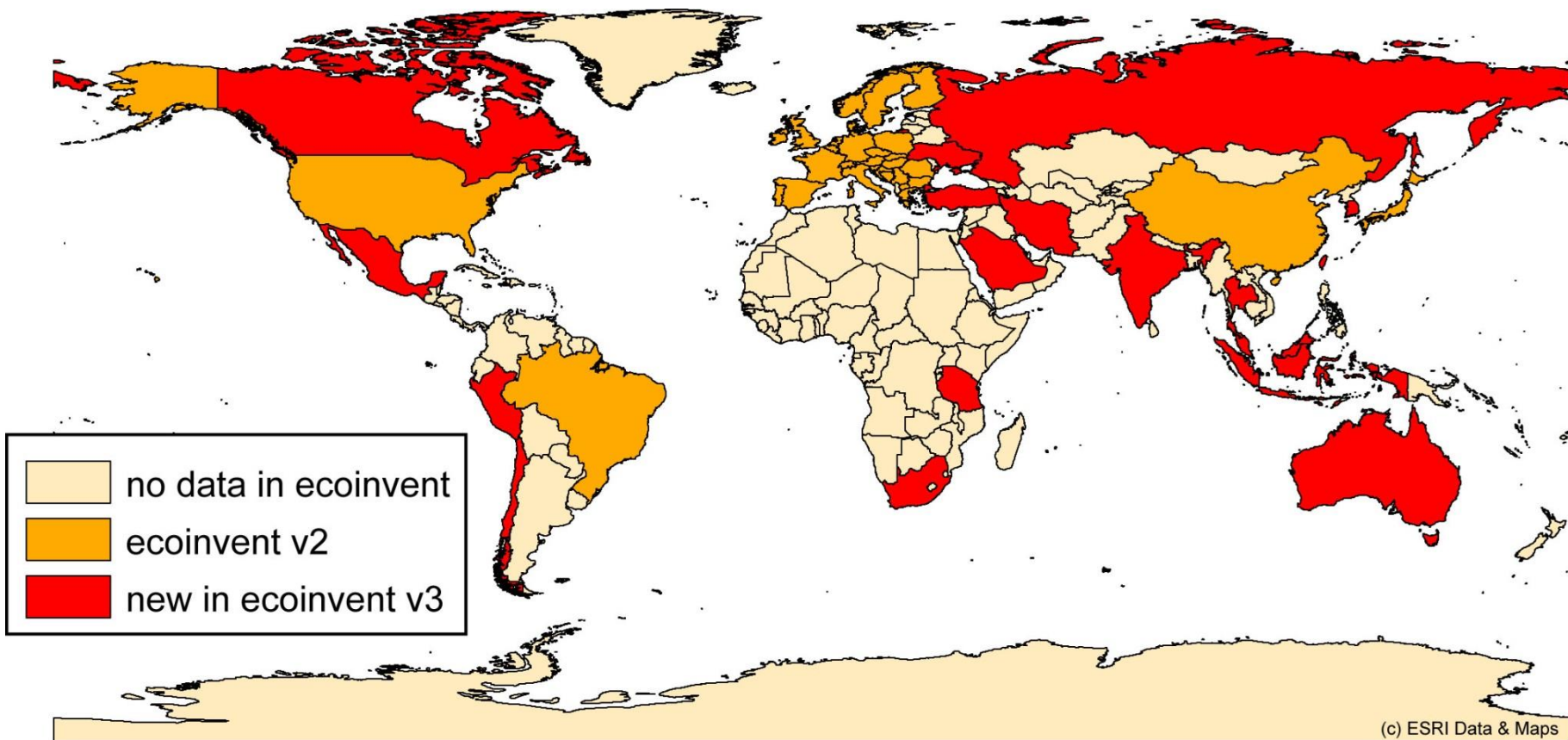
ecoinvent
Centre

Overview of the new data in v3.1



- Electricity and heat
- From forest to wood products
- Paper and cardboard
- Agri-food
- Chemical
- Tap water
- Road transport
- Machinery operation
- Building materials
- Mining and metals

New electricity data in v3: 90% produced electricity in the world



Work done by: PSI and CIRAIG
Slide by PSI

Heat production and incineration

- **Incineration (v3.1)**

- Work done by G. Doka, funded by BAFU
- Update of incineration activities



- **Heat production**

- Work done by PSI, funded by BAFU
- Furnaces updated for v3.0
- Heat production activities based on wood were updated or created new for v3.1



Forestry in v2.2 & v3.01

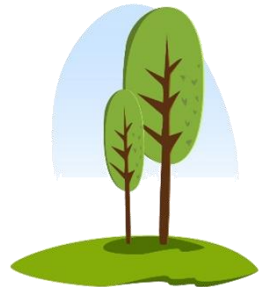


Hardwood forestry/RER



Softwood forestry/RER

Forestry in v3.1



Birch/Sweden



Mixed species/Switzerland



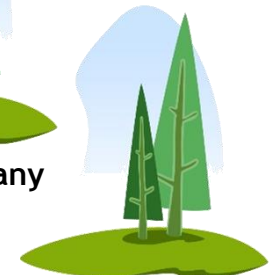
Oak/Germany



Beech/Germany



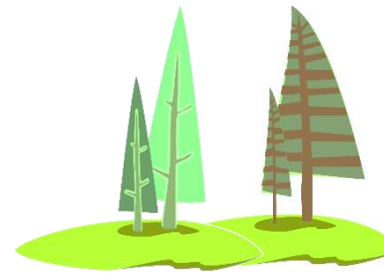
Pine/Germany



Pine/Sweden



Mixed species/Switzerland



Boreal forest/Quebec



Spruce/Sweden



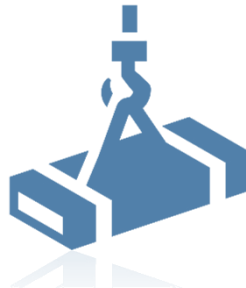
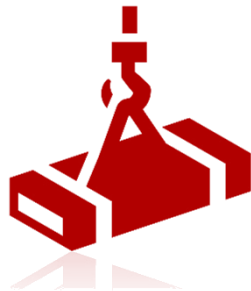
Spuce/Germany

Work done by: F. Werner
and CIRAIG (Québec data)

Forest machinery in v2.2 and v3.0



Forest machinery in v3.1



- And new operation datasets:
 - Chipping (different chippers)
 - Forwarding
 - Harvesting (different ways)
 - Power sawing
 - Skidding
 - Yarding (different ways)

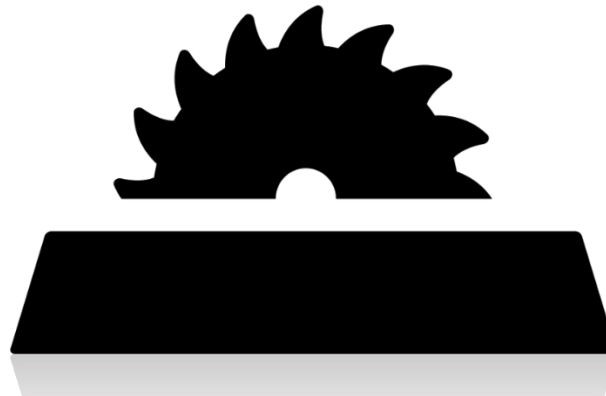
Wood preservatives in v3.1

- Work done by F. Werner, supported by BAFU (all wood related data)
- **New more detailed data on wood preservative production:**
 - Distinction between: water and solvent based; creosote; inorganic or organic salt (Cr or Cr-free)
 - Indoor or outdoor use (ground or no ground contact)
 - Can be matched with the actual classification types of wood preservative
 - Prepared to be used in different application types
- **New more detailed data on wood preservation activities:**
 - Different application methods: pressure (6 methods) and non-pressure (12 methods)



The sawmill in v3.1

- Work done by ETH and Chalmers (BAFU funded), data provided and approved by the Swiss Forest Industry
- Higher level of detail: more products available (beam, board, lath)
- Generic products still available (sawnwood, hardwood, [...];
sawnwood, softwood, [...]).



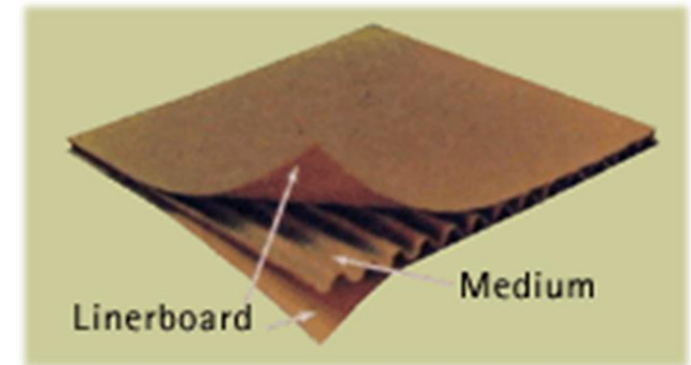
Wood boards in v3.1

- Some board production activities have been updated or are new (F. Werner; BAFU funded), concerning:
 - Fibreboard
 - Oriented strand board (OSB)
 - Particle board
 - Medium density fibreboard
- New regional data on boards:
 - Brasil: particle board (University São Paulo)
 - Quebec: data from industry on OSB (CIRAIG)

Paper and cardboard in v3.1

- Updated data for Europe in v3.01 (data from FEFCO)

- ▶ Fluting medium
- ▶ Linerboard
- ▶ Corrugated board box



- New Canadian data from industry present in v3.1 (CIRAIG)

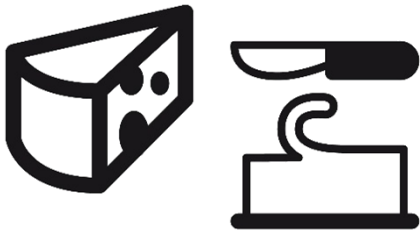
- ▶ Fluting medium
- ▶ Linerboard
- ▶ Corrugated board box
- ▶ ...

Image: Action Packaging (actionpackaging.com)

Food in v3.1 (industrial data)

- **Dairy (CIRAIG & ecoinvent):**

- Milk
- Yogurt
- Cheese
- Butter
- Cream



- **Soja derivatives (CIRAIG):**

- Tofu
- Soybean beverage

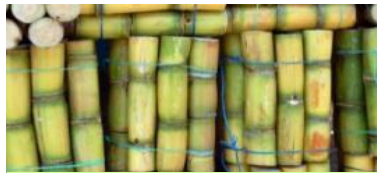


More than 30 new fruits and vegetables in v3.0



Work done by: ETH

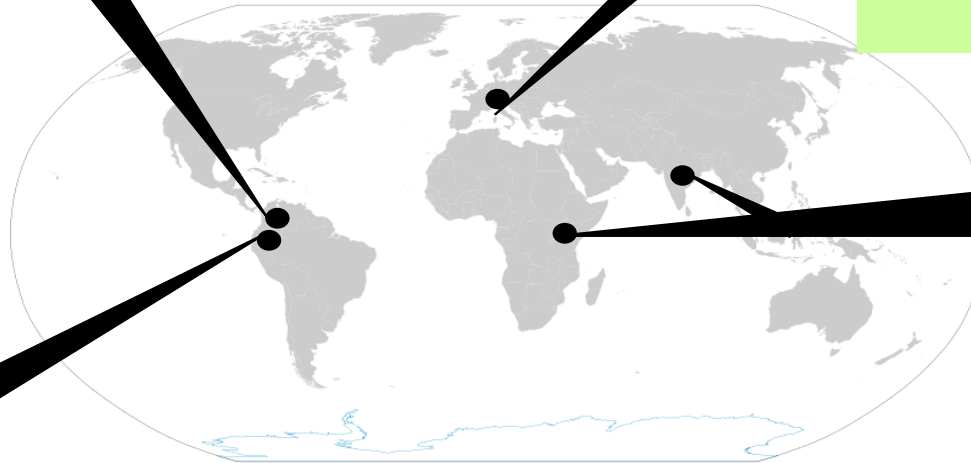
New inventories on biofuels in v3.0



Sugar cane
Colombia



Alfalfa-grass
mixture, CH
Miscanthus, DE
Willow, DE



Oil palm
Colombia



Jatropha
India
East-Africa

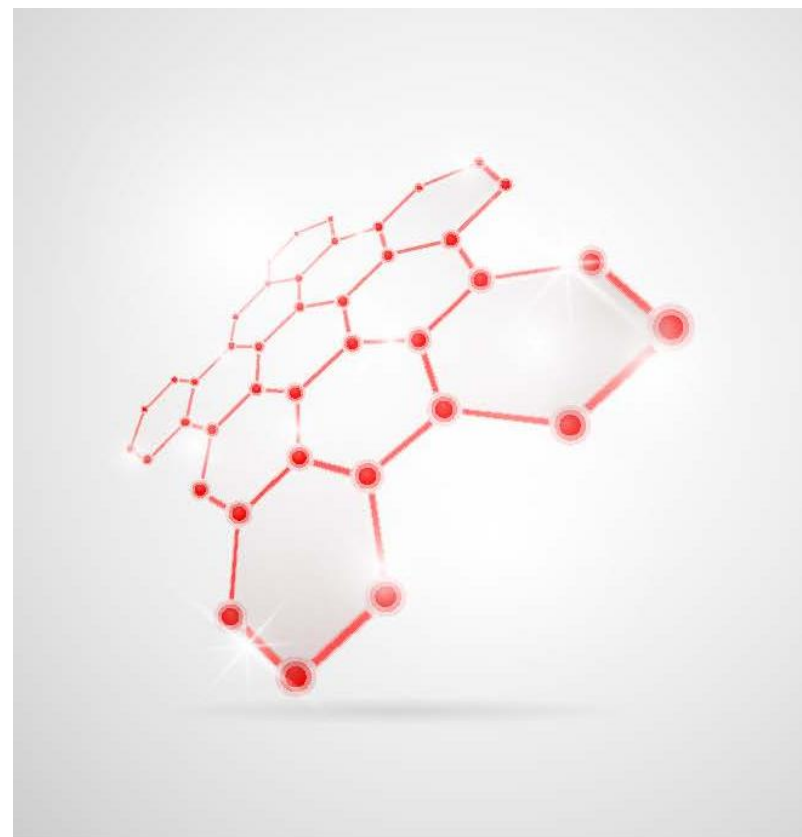
Work done by: EMPA, ART
Slide: Thomas Nemecek, ART.

Agriculture: changes up to v3.1

- Emissions of ALL agriculture activities were updated for v3.0
 - New model developed by Agroscope
- New agricultural services in v3.1: regional industry data from Canada (CIRAIG)
 - Tillage
 - Bale loading
 - Fertilizer spreading
 - ...

Chemical Products

- **More than 80 new chemicals for v3.0 (ETH)**
 - citric acid*
 - glycine
 - sodium amide
 - acrolein
 - trifluoroacetic acid
 - lactic acid
 - ...
- **Around 10 new chemicals for v3.1 (CIRAIG)**
 - iron chloride
 - tetraethyl orthosilicate
 - ...



*These confidential datasets in several geographies (CN, RER, RNA, GLO) were provided by myclimate

Tap water in v3.1

- Higher level of detail (data delivered by CIRAIG)
- New infrastructure data (new water works construction)
- New tap water production activities in GLO, Québec, CH, Europe
 - tap water production, conventional treatment
 - tap water production, conventional with biological treatment
 - tap water production, direct filtration treatment
 - tap water production, microstrainer traitement
 - tap water production, seawater reverse osmosis, [...]
 - tap water production, ultrafiltration treatment



Road transport

Passenger transport (Empa & PSI) in v3.0

- Combustion Engine Cars (petrol, diesel, natural gas); different Sizes (“small”, “medium”, “large”); different European Norms (3, 4, 5).
- Electric car.



Road freight transport in v3.1 (PSI)

- New data implemented to
 - Update EURO 3, 4, 5
 - Generate new data on EURO 6



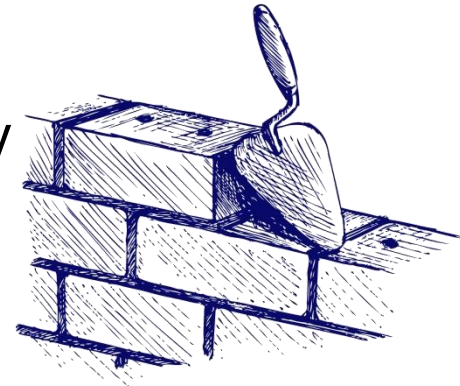
Machine operation model in v3.1

- Model developed and integrated in the database by CIRAIG
- Machine operation model represents a standard situation and it can be adapted to specific data using:
 - Power value of the machine in kW
 - Specific emission data



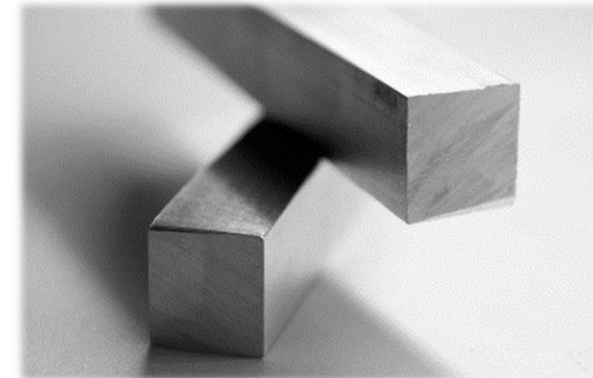
Building materials

- Cement, concrete (ETH, CIRAIG)
 - Cement data updated with data from industry in Europe and Canada
 - New concrete data for RNA region (specific classification)
- New products (Québec; CIRAIG); industry data
 - Steatite (soapstone)
 - Shale and shale bricks
- Regionalisation of existing products (to Canada) with industry data
 - Lime, limestone, quicklime

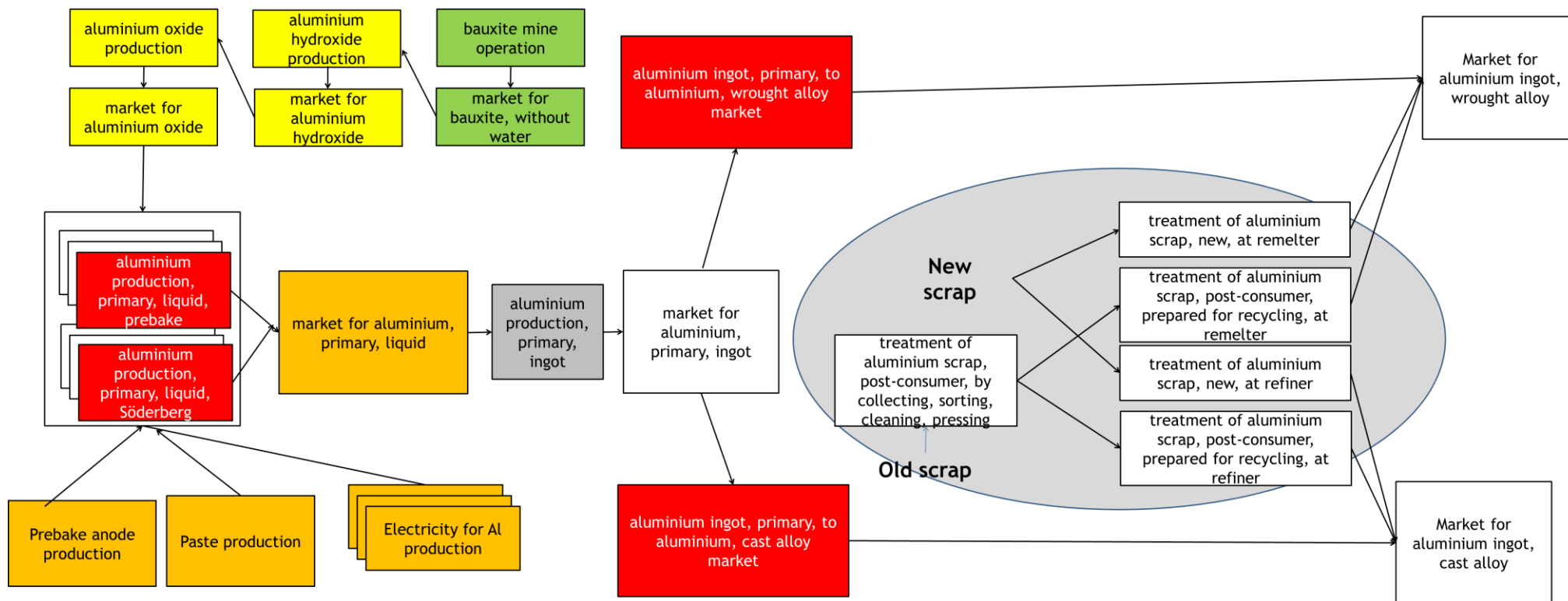


Aluminium in v3.1

- Data from IAI; provided by IAI and CIRAIG.
- New data on electricity production for the aluminium industry (per region of the world)
- New data on primary aluminium production (higher level of detail), per region of the world
- New data on secondary production (higher level of detail), Europe and GLO



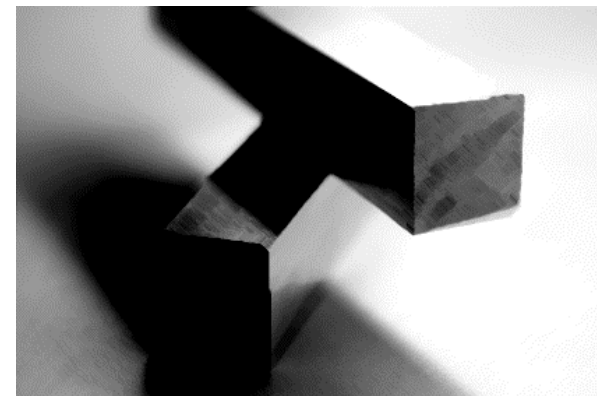
The full aluminium update



Data provided by IAI, and implemented by IAI and CIRAIG
Slide: Pascal Lesage (CIRAIG)

Metals: new in v3.1

- **Magnesium and ferrosilicon** (data from IMA; provided by German Aerospace Centre)
 - New more detailed data on production with regional data: China, Israel
- **New products or new activities (CIRAIG), from industry data**
 - Iron pellet
 - Gold and silver mining (Canada)
 - Steel and aluminium lost-wax casting
 - Steel forging



Thank you for your interest in ecoinvent version 3!



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Confédération suisse
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