From Waste Management to Materials Management

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Support achieving political priorities

- Minimize waste
- Build a circular economy
- Develop industry

?

‘A good waste is an avoided waste’

‘Waste from today is the resource of tomorrow’

Based on input from recycling

➔ Understand the dynamic material lifecycle in a growing economy

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Understand dynamic lifecycle & resource depletion

- Resource depletion: because of time frame reduction resulting from current steady growth of material consumption
- Is an indicator of those environmental impacts of the material chain which are global and cumulative and due to primary prod^{on}
- Ultimate targets should be expressed in terms of **time gain**, not volume reduction
- For most metals: exponential trend over several decades in a row

➔ How far does recycling contribute to mitigate resource depletion? Under which conditions?

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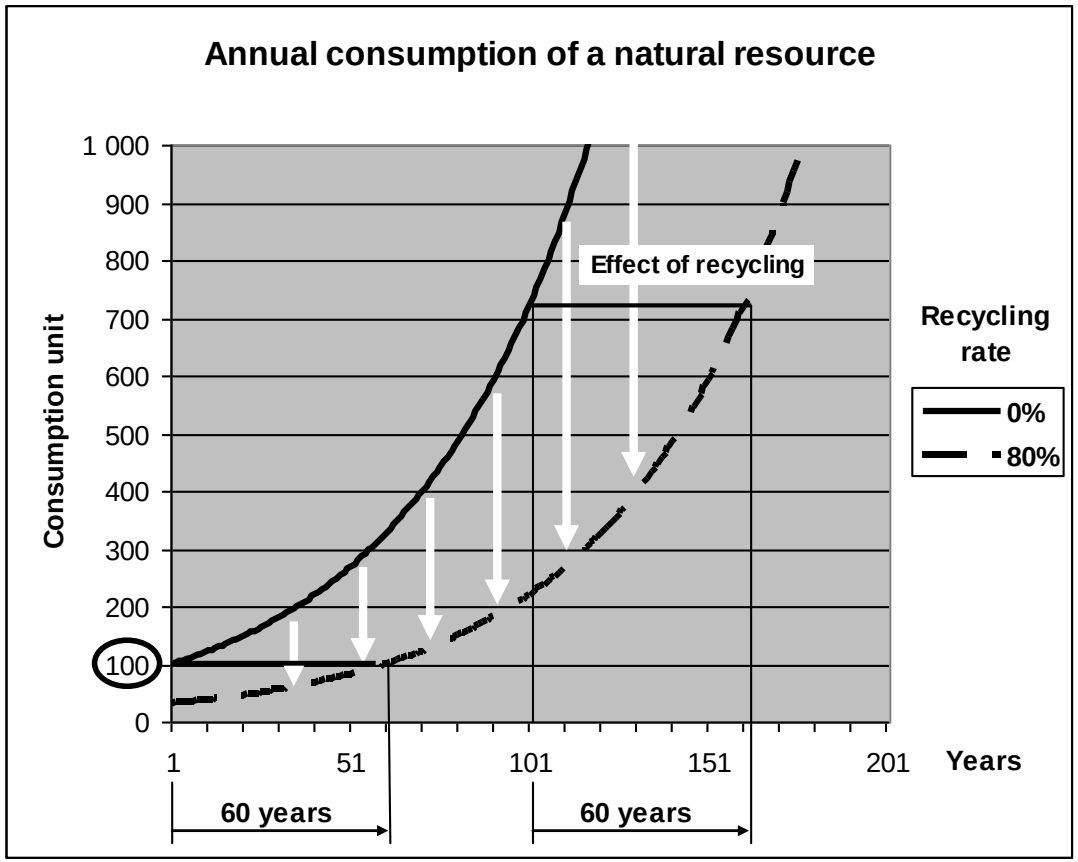
Is recycling the solution?

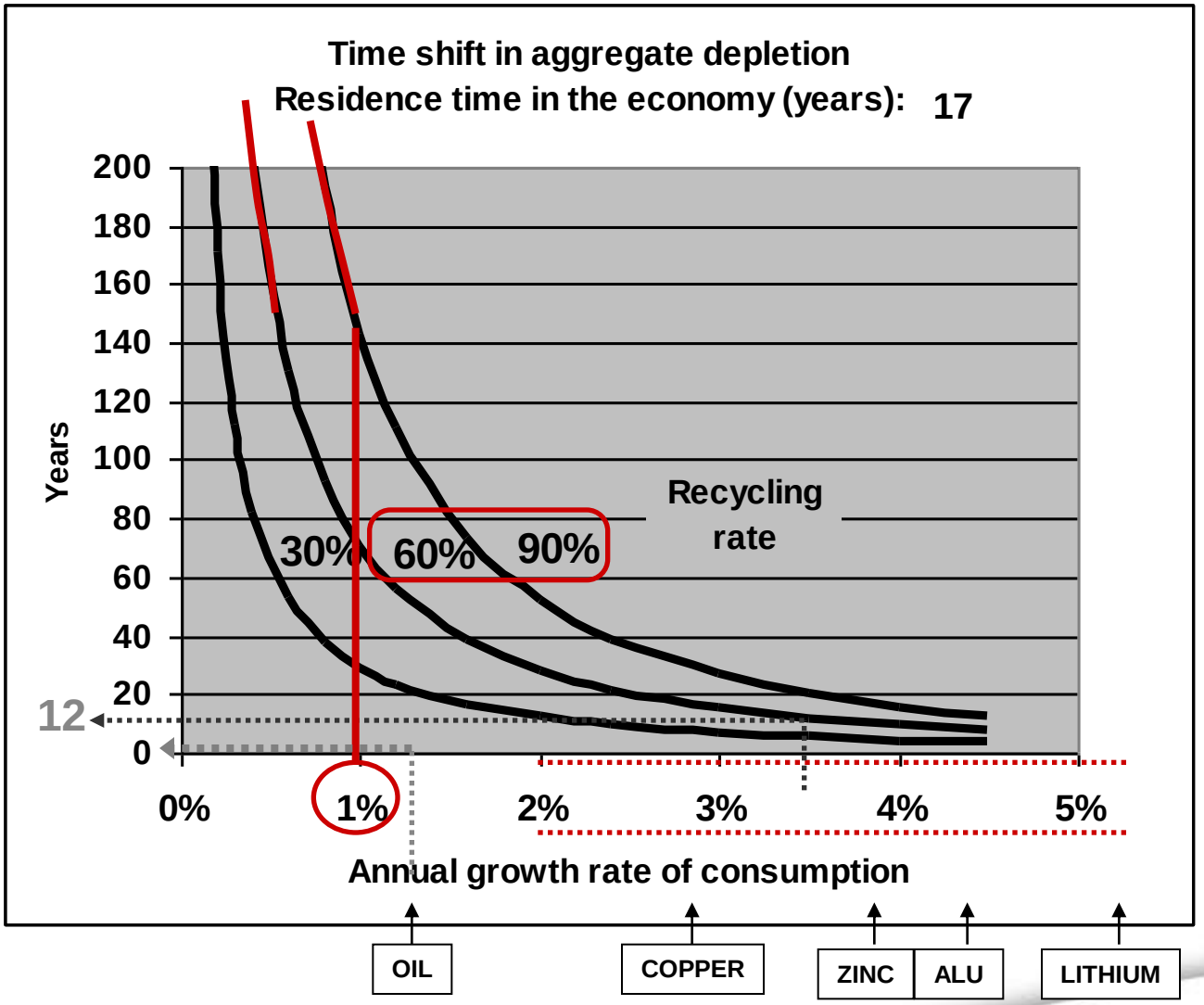


The annual consumption curve of virgin material is flattened by the effect of recycling. But when, after 60 years*, consumption with recycling also overtakes the 100 value point, the dashed curve becomes identical to the other curve, except for a shift of 60 years.

Recycling delays by a given time shift the depletion of the natural resource. Once and for all. **For how long?**

* **In this example**

Is recycling the solution?
How long do we gain ?



➔**Conclusion #1:**

We cannot gain more than 50 years against resource depletion if the consumption growth rate of any given material is above 2% per year.

➔**Iron / Steel :**

3.5% annual growth rate

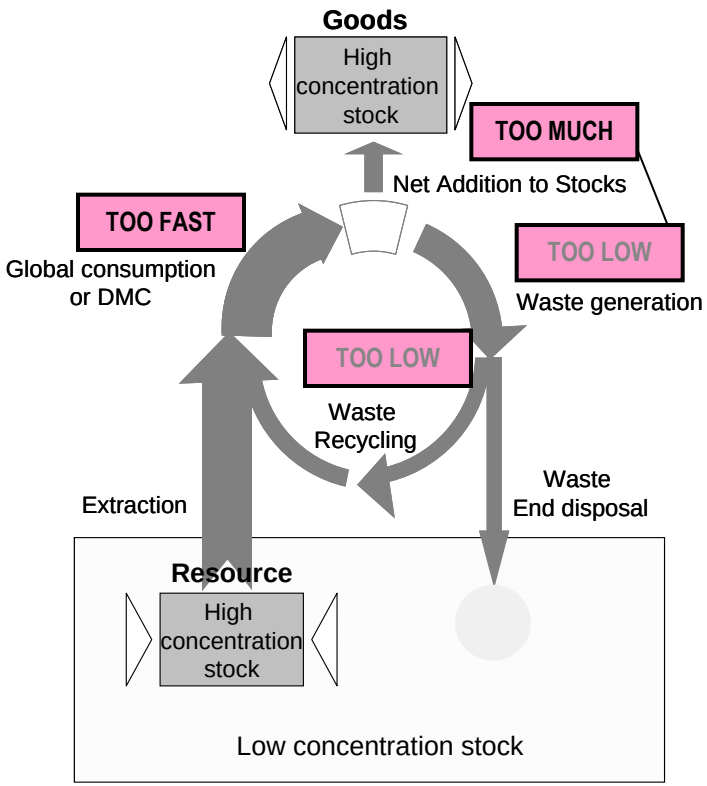
62% recycling efficiency rate

offers a 12 year time shift against depletion

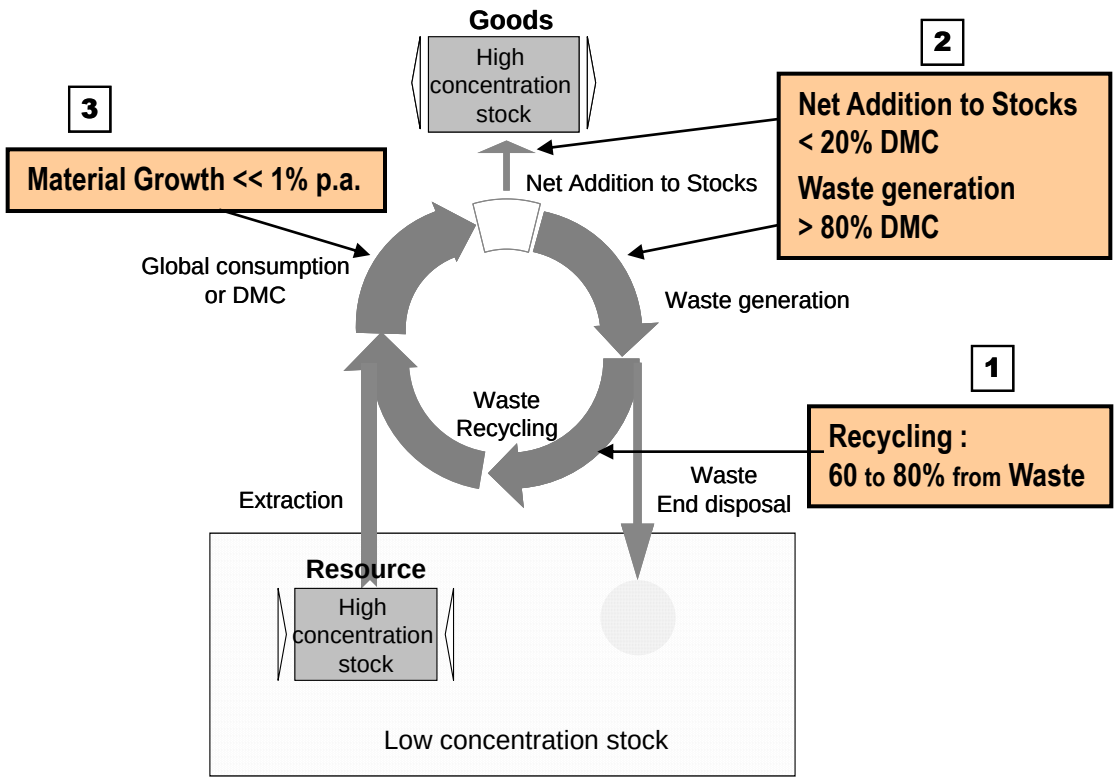
in comparison with no recycling at all.

The resource issue:
Three criteria for a sustainable life-cycle

Non-Sustainable



Sustainable life-cycle



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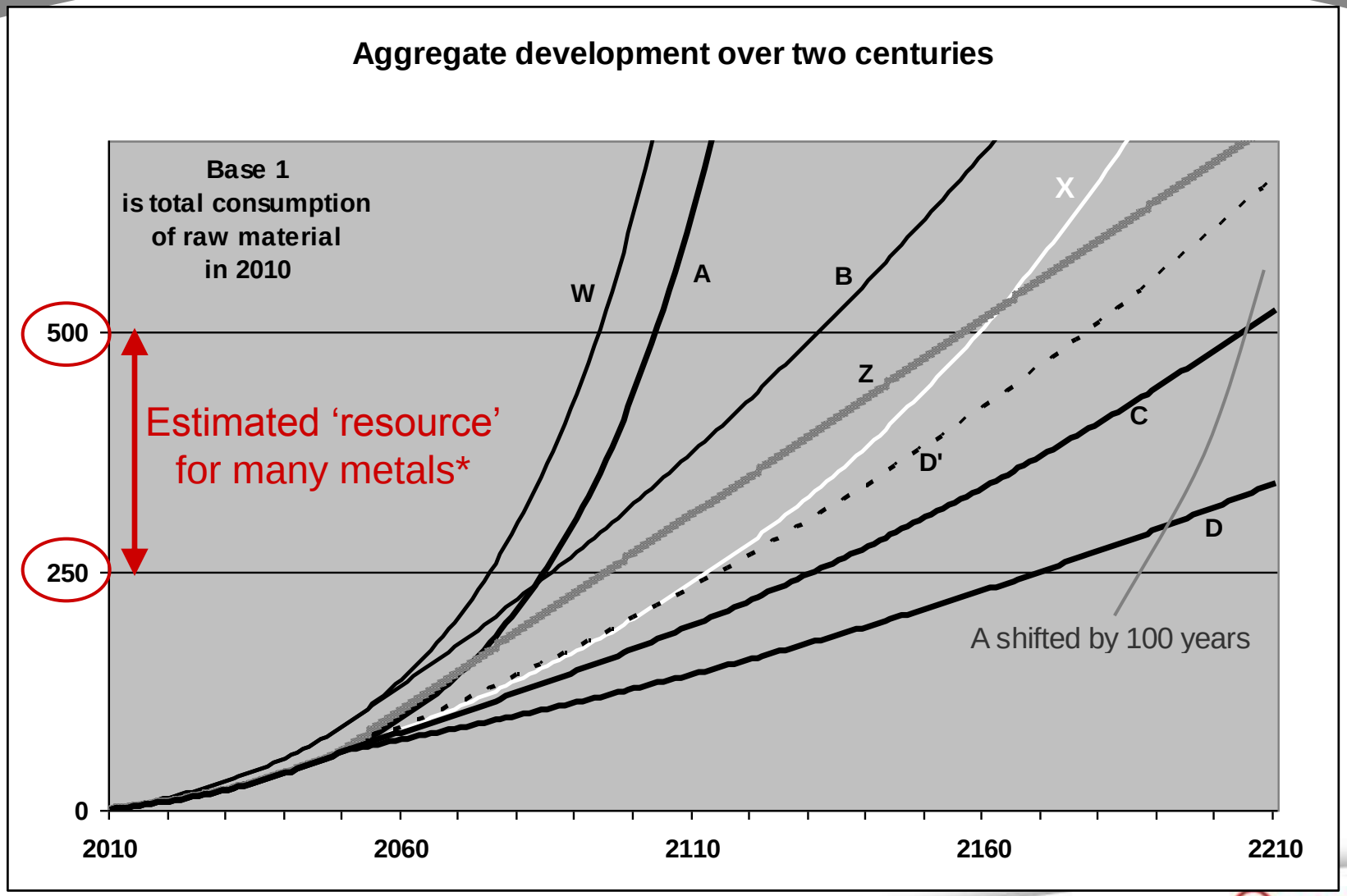
The resource issue:
Material growth scenarii



* Source: USGS

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Change on the long term
Setting proper goals – Some suggestions

- Offer a vision (see IPCC):
  - What are the global effects we seek to mitigate?
  - How do look like alternative scenarios on the long run?
  - What do we want to achieve at global scale?
- Goals, priorities and indicators based on LCA, for every material
- Global and national permanent dashboard, material by material, including evaluating and monitoring the resource sustainability:
  - DMC growth
  - NAS to DMC / Waste to DMC
  - Recycling efficiency rate
- Clear and consistent policies related to a common vision
  - From waste policy to materials policy (EU Framework Directive)
  - Main global challenges do not rely first on waste but on production and consumption

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Thank You

François Grosse

Resource: http://sapiens.revue.org/index906.html

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