

# From linear to circular

Help reducing the barriers relating to sustainability by using the opportunities in Additive Manufacturing and create new business models!

## What to deliver:

Content: a two-minutes pitch containing:

- Propose solution to case
- How does AM contribute
- Elements from the three learning sessions
  - Design
  - Technology
  - Sustainable business models

Format: Two pages with proposal

- Preferable flip-overs, visual slides etc.
- Please use models and visual tools to show your proposal

## Background information

A great part of the Danish manufacturing companies has ambitious targets for reducing CO<sub>2</sub> created by their operations. The latest report from Ellen Macarthur Foundation shows, that if we want to reduce the environmental footprint to reach the target of having a maximum temperature rise of 1,5 degrees on average in 2050, we do not only need to focus on renewable energy, but also on how we manufacture products. According to Ellen Macarthur Foundation, the production of new goods is responsible for 45 % of all the current CO<sub>2</sub> emissions. If we look at those 45 %, 45 % of the reduction should come from new circular business models, whereas 55 % of the reduction should be due to new technologies (such as 3D print). The way of which we can reduce 45 % of the CO<sub>2</sub> emissions from manufacturing of new goods is to re-think the way, we design, manufacture, and use products on. We believe, that with the right sustainable mindset Additive Manufacturing can play a crucial part in achieving this.

The mantra behind circular economy is a systematic approach to economic development designed to benefits the companies, the society, and the environment. Oppositely of the more classical “take-make-waste”-linear model, the circular way of thinking is generative by design and will foster growth without consuming limited resources such as oil and coal. The circular mindset contributes to the reduction of CO<sub>2</sub> emissions by transform the way we produce and use goods. Can Additive Manufacturing be the solution to some of these challenges? And if so, how?

To achieve UN's sustainable development goals, we need to re-think the way we manufacture and change from a linear to a circular mindset. We kindly ask you to focus on the below question.

How can you use Additive Manufacturing to build a sustainable business model and create end-value for the consumer?

Please bring your proposal on, how you by the use of the opportunities given by Additive Manufacturing can design a solution, which will solve a sustainability challenge. You are more than welcome to use one or more of the strategic lifters.

Below you can find three current challenges within sustainability and Additive Manufacturing. If you want to, you can take your starting point here.

### Material

Can you make a system and a business model, where the lifetime of the material – and the product – can be expanded?

### Business model

3D printing has a range of benefits such as less transport and "print-on-demand". How can you utilize this in a sustainable business model?

### Design

Can you use the design opportunities in 3D printing to create new innovative products? And what value will this create?

## AM-TECHNOLOGY AS A STRATEGIC LIFTER

Use one or more of these lifters as inspiration in your proposal



AM can customize products to the customer's need – 1 size fits 1



AM can move the production to the customer's location and thereby offer great flexibility to the customer



AM can "activate" the customer in the design- and test phase of the product development



AM can create new unique collaboration models and partnerships (design, production, digital fabrication)