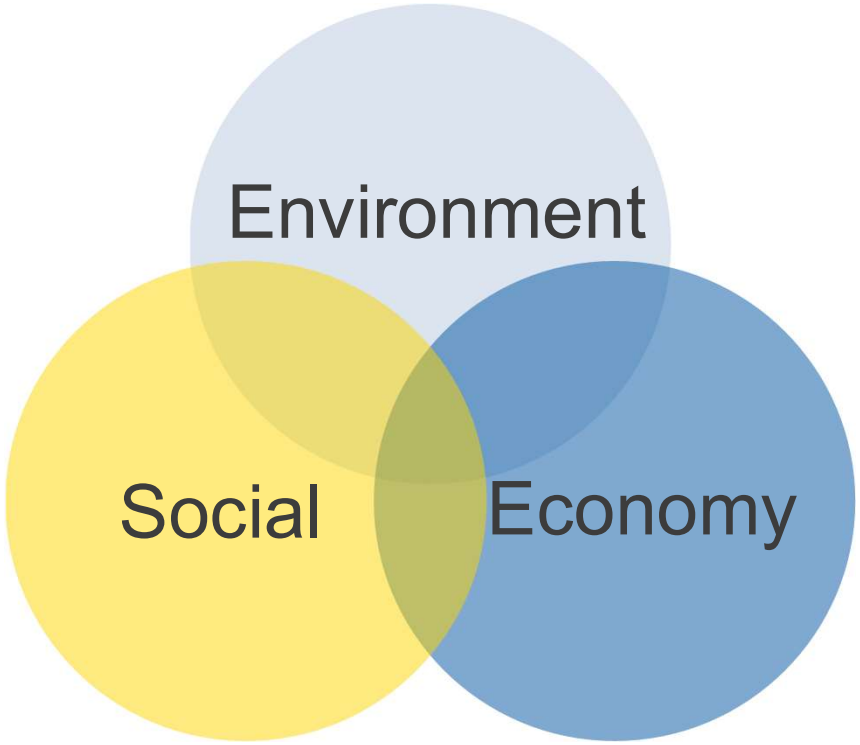
Produktutvikling med miljøperspektiv
Nypol RE

Jon Borge Finset, 25 oktober 2022

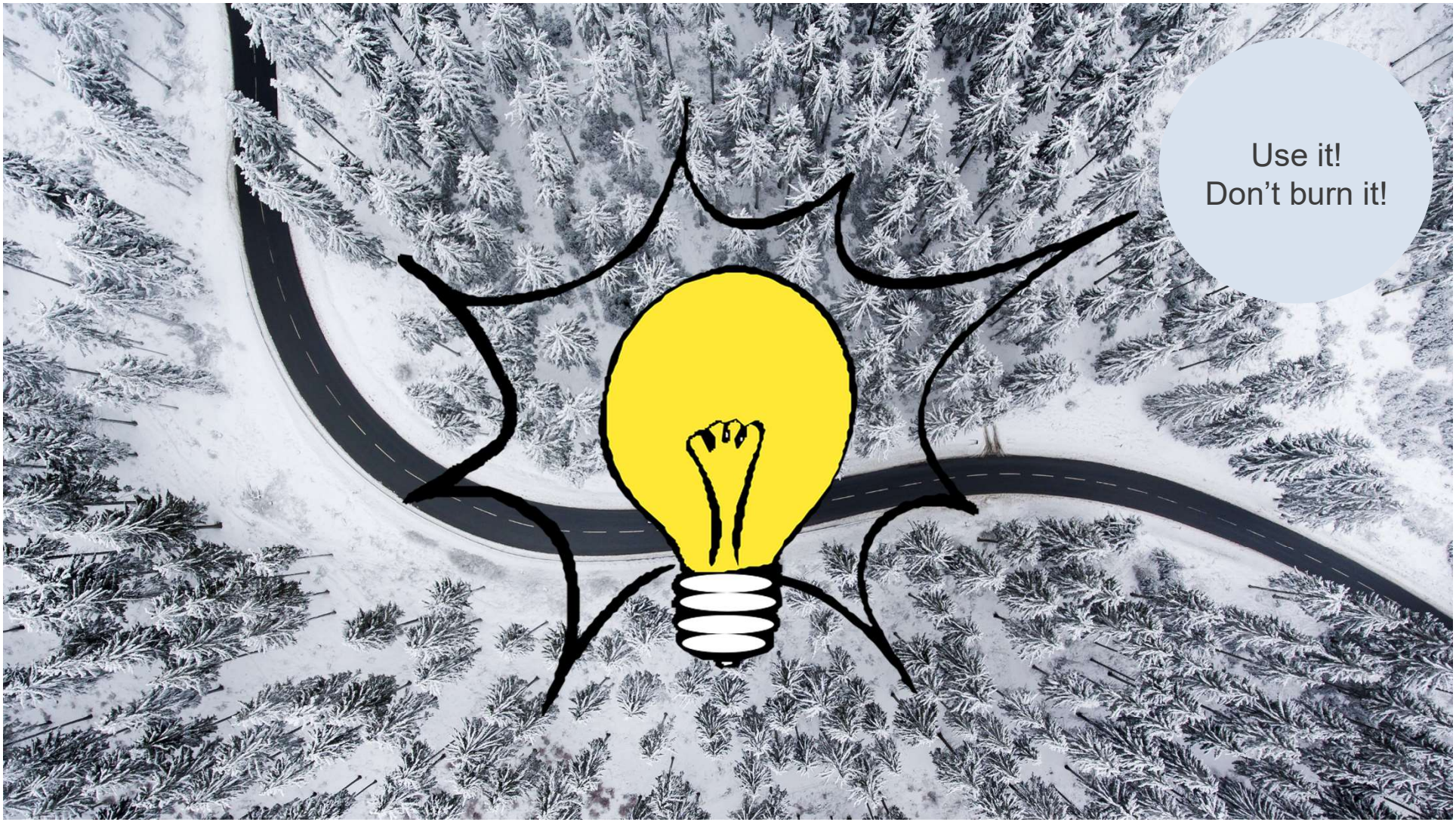
Agenda

- The Nynas' way
- What we had to consider when developing a new material
  - The performance of biogenic polymer modified bitumen
  - Circularity
  - Health and safety
- The carbon footprint
- Conclusions



The Nynas way


Bitumen is a sustainable construction material
Durability
Optimise maintenance
Cold mix
Biogenic material
Warm mix
Maximise RAP usage

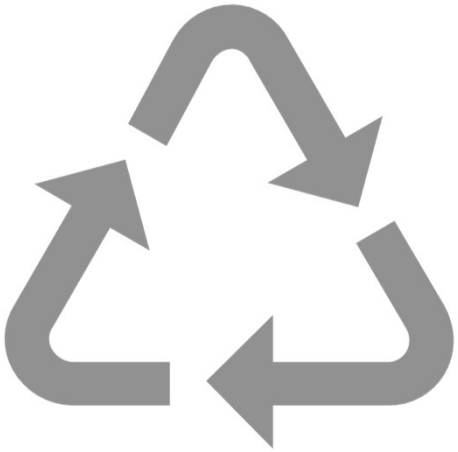

Use it!
Don’t burn it!


Use it!
Don’t burn it!
Optimise the use of resources by developing a durable and re-usable binder with lowered carbon footprint

Developing a new product

What to consider when developing a new material

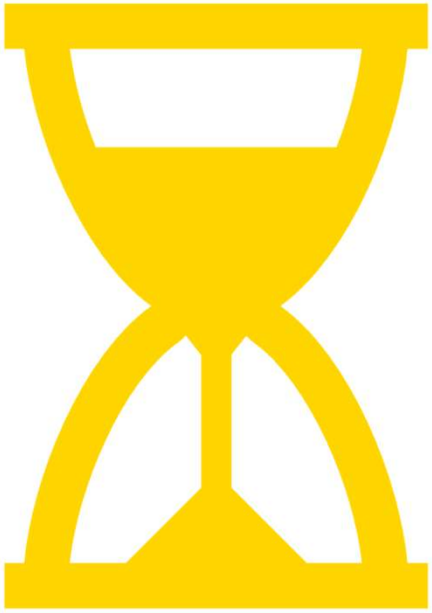
Durability



Circularity

Health and safety

What to consider when developing a new material



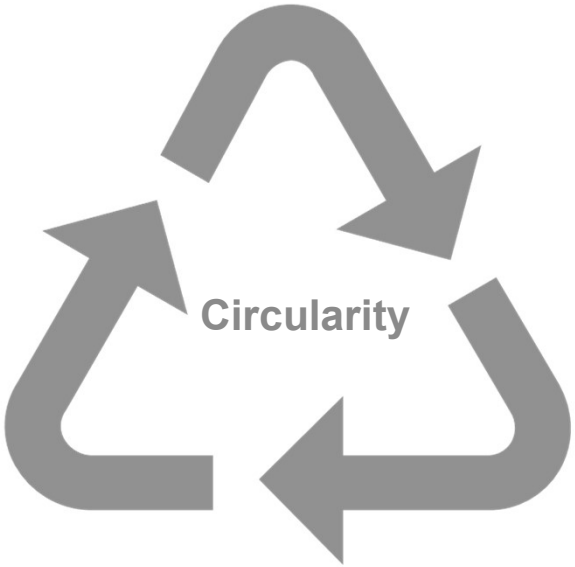
Durability

Binder
- Stability
- Performance
- Rheology
- Ageing

Asphalt mix
- Stiffness
- Fatigue
- Rutting
- Adhesion

Fields trials
- Pavement performance

What to consider when developing a new material



Can a biogenic binder be used together with RAP?

Can an asphalt containing biogenic binder be recycled?

What to consider when developing a new material

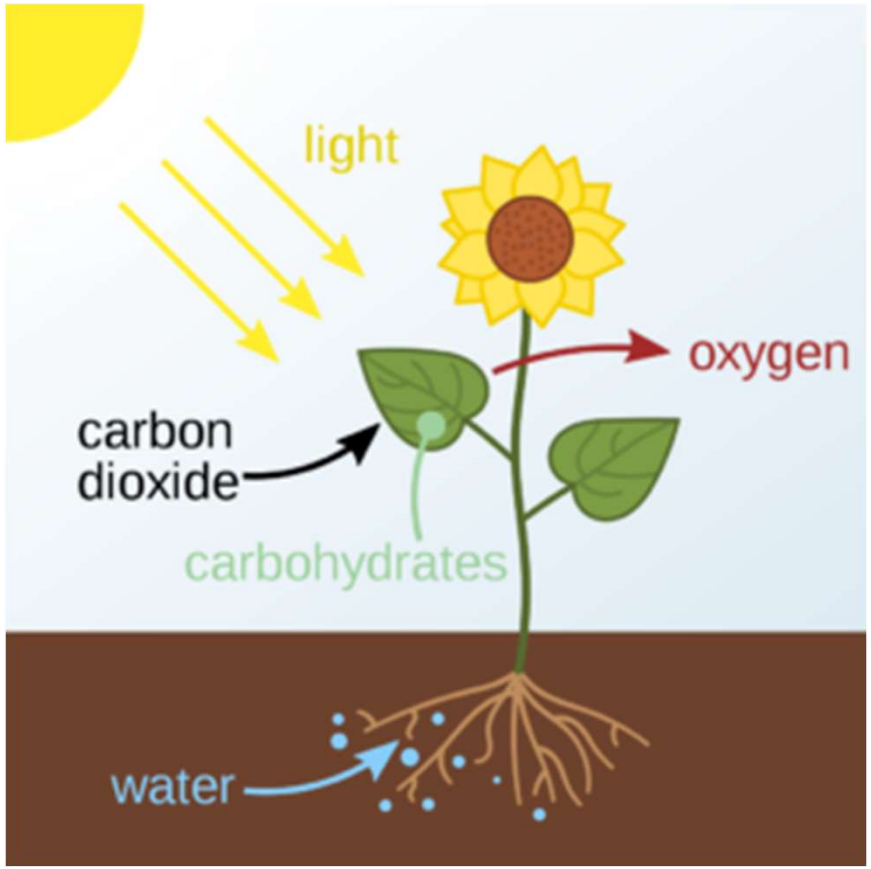
Health and safety

Any binder, in itself, must not be harmful

There is a need to avoid that dangerous substances
are emitted into the work environment

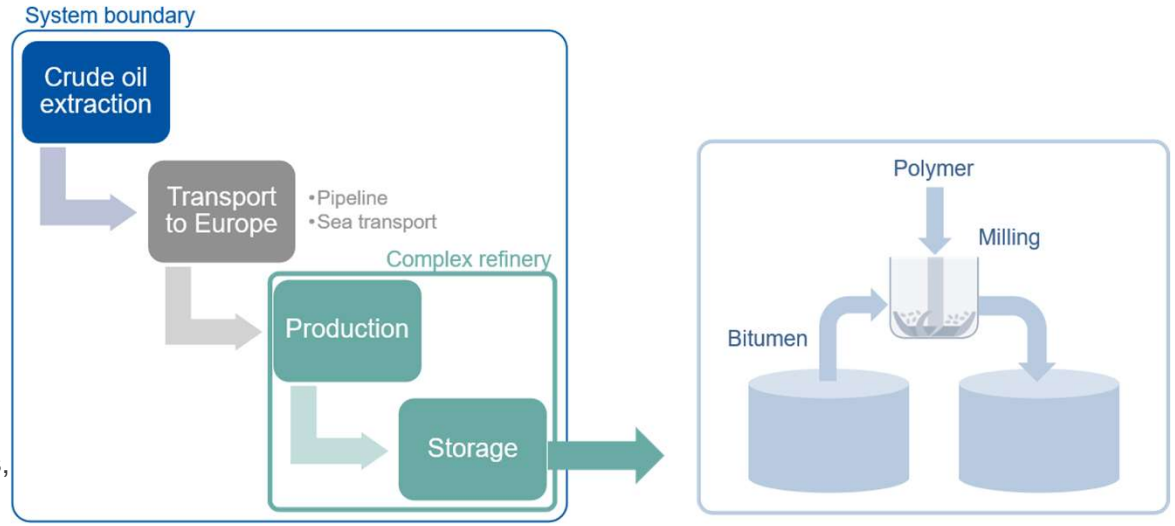
The carbon footprint

Biogenic material



Standards used for carbon footprint calculation

- Eurobitume LCI 2012 & 2020, ISO 14040 & ISO 14044
  - Bitumen ex. gate refinery
  - Polymer and PMB production
- EN 15804:2012 and CEN TR 16970:2016
- Journal of Industrial Ecology, 2015, Volume 20 #5,
  - Greenhouse Gas and Energy Life Cycle Assessment of Pine Chemicals Derived from Crude Tall Oil and Their Substitutes, Sarah A. Cashman, Kevin M. Moran, and Anthony G. Gaglione.



Importance of considering pavement lifetime / durability

How much increase of pavement life is required to reduce embodied CO_2 by 25%?

And when using a more CO_2 intensive binder?

Conclusion


BEAUTY
lies WITHIN
Welcome Nypol RE!
PMB with significantly reduced
carbon footprint.

TAKING OIL FURTHER

We take oil further to bring lasting value
to customers and the world we live in.