

ACF – Lightweight structure expertise for the BMW Group.

SGL Automotive Carbon Fibers.

Production Sites - Moses Lake/ USA.



BMW i. BMW i3 and BMW i8.

BMW i3



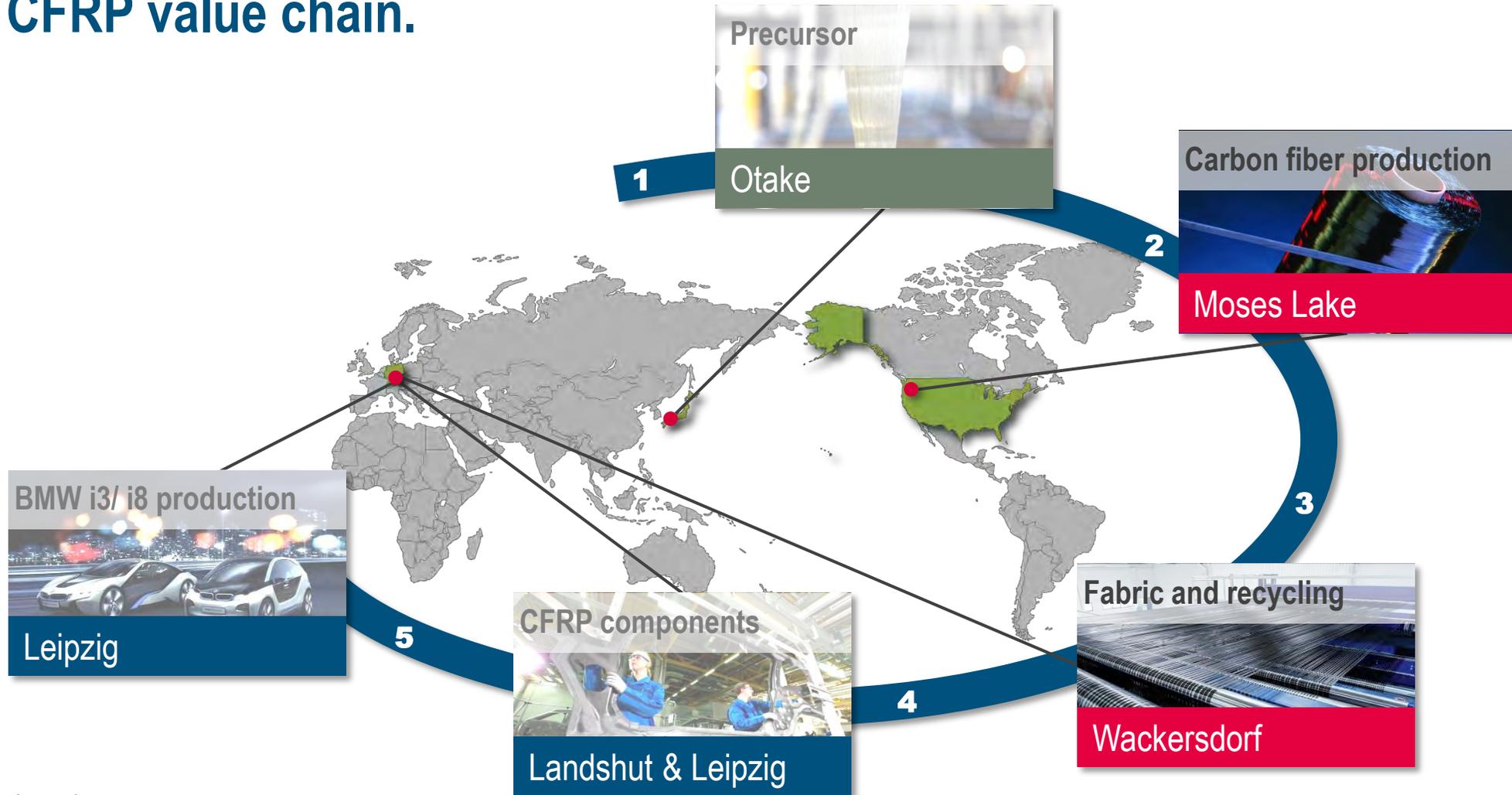
Launched 11/2013

BMW i8



Launched 2014

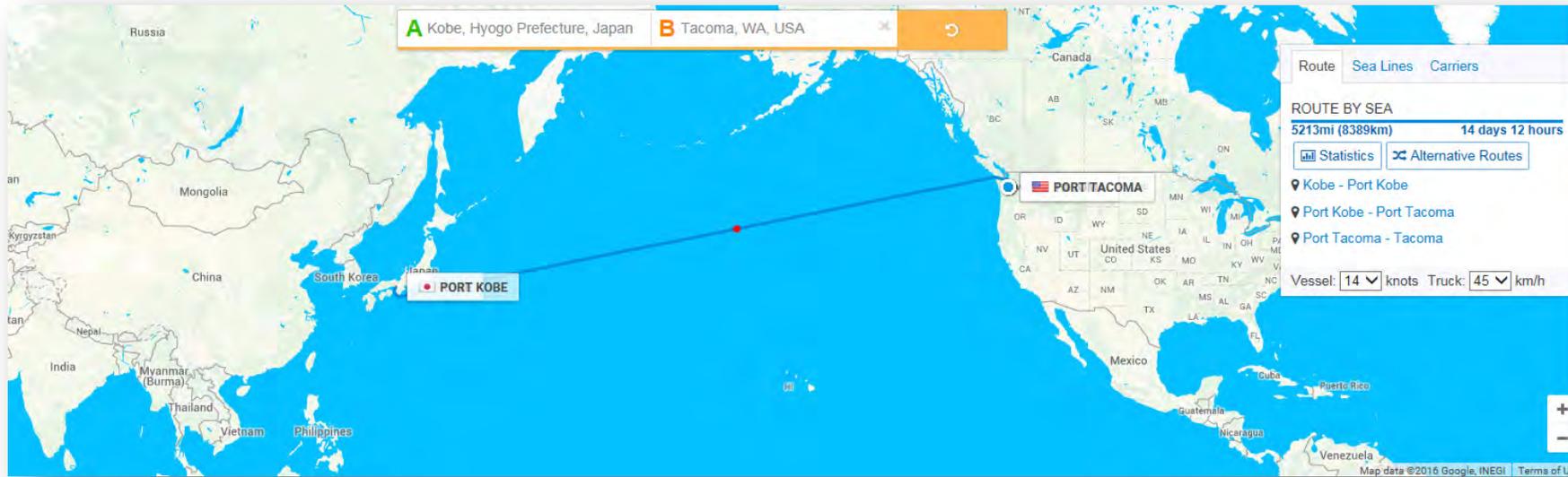
CFRP value chain.



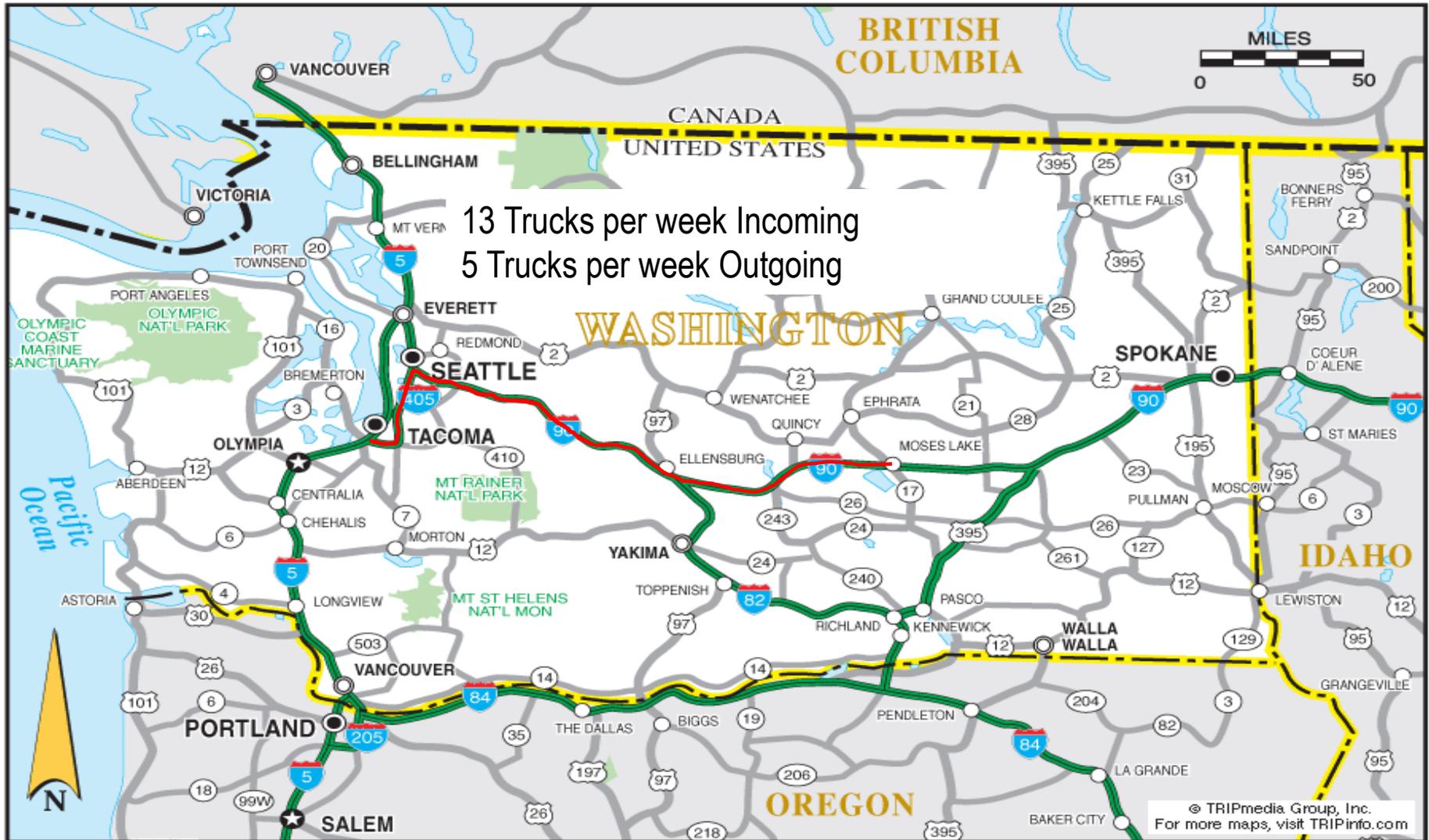
Agenda:

-  Mitsubishi Rayon-SGL Precursor Co. Ltd.
-  SGL Automotive Carbon Fibers
-  BMW Group

Routing Kobe > Tacoma.



Routing Tacoma > Moses Lake > Tacoma



Routing Tacoma > Bremerhaven, Water Route



What is CFRP.

Character istics.

- **Carbon fibers** are industrially manufactured fibers consisting of 95% carbon.
- **One ACF carbon fiber bundle** (roving) contains 50,000 individual filaments.
- **A filament** has a diameter of around 7 micrometers

Diameter:

0.050

Human hair

0.007

Filament

Advantages.

- **Lightweight.**
- **High strength.**
- **High energy absorption.**
- **Long-lasting.**



Current use of carbon fiber reinforced plastics (CFRP).

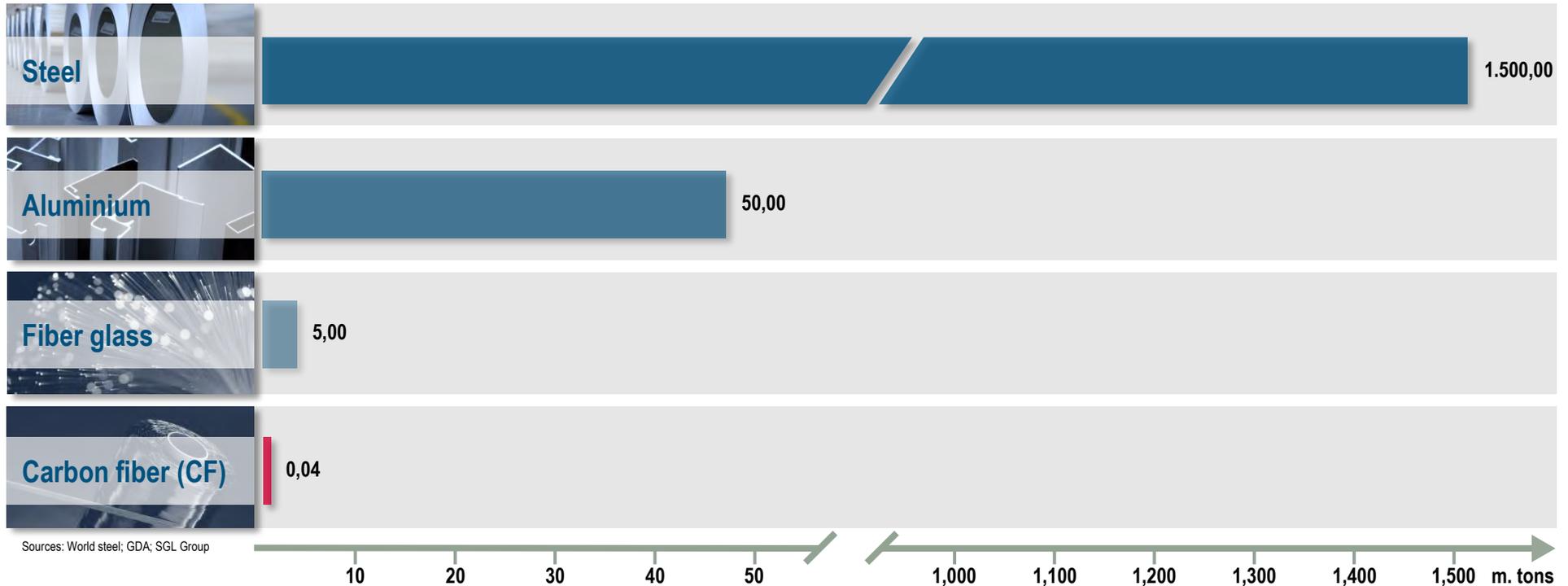


- Produced in small quantities.
- Long cycle-times in production.

➔ High cost.



A comparison of carbon fiber production volumes.



For the i3/ i8 BMW needs approximately 8 % of the world's current annual production capacity of CF.

Thank you very much for your attention.

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