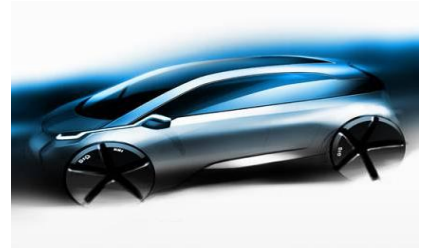
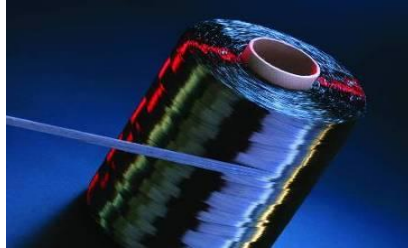


# Financial Analysts' Meeting – March 15, 2011

## SGL Automotive Carbon Fibers (SGL ACF)

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**Dr. Joerg Pohlman**  
**Managing Director**  
**SGL Automotive Carbon Fibers**

A BMW Group and  
SGL Group Joint Venture

**SGL**  
AUTOMOTIVE CARBON FIBERS

# SGL Automotive Carbon Fibers

## The utilization of carbon fiber materials is essential to meet the lightweight requirements of the BMW Megacity Vehicle

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### Main arguments for the utilization of carbon fiber materials:

- Low weight: CFRP parts are approx. 50% lighter than comparable steel parts and approx. 30% lighter than comparable aluminum parts
- High tensile strength/stiffness: CFRP has excellent damping characteristics and high energy absorption in a crash
- Corrosion resistance: Avoidance of expensive protective coatings as CFRP is resistant to corrosion, acid and solvent

# SGL Automotive Carbon Fibers

The joint venture was initiated to meet BMW Group's demand for lightweight materials made of carbon fibers

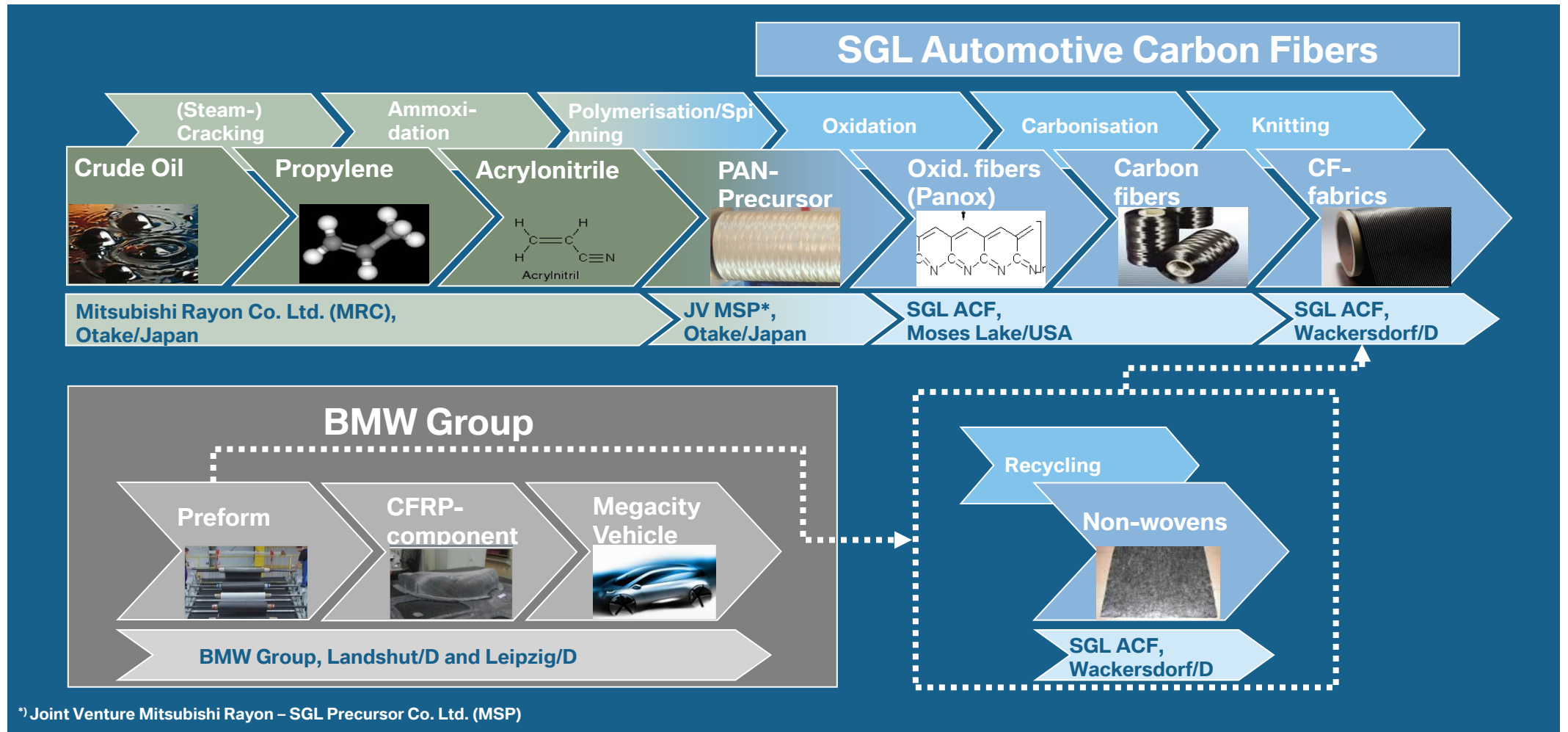
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## Motivation for setting up the joint venture:

- Supply guarantee:                      Securing sufficient long-term production capacity for carbon fibers and fabrics
- Technological competitiveness:                      Securing technological competence for manufacturing carbon fibers and fabrics
- Financial competitiveness:                      Securing full cost transparency and influence on reducing production costs

# Overview Global Value Chain

SGL ACF is responsible for the purchasing of PAN precursor, the production of carbon fibers and fabrics and the recycling process



# Moses Lake Plant – Carbon Fibers

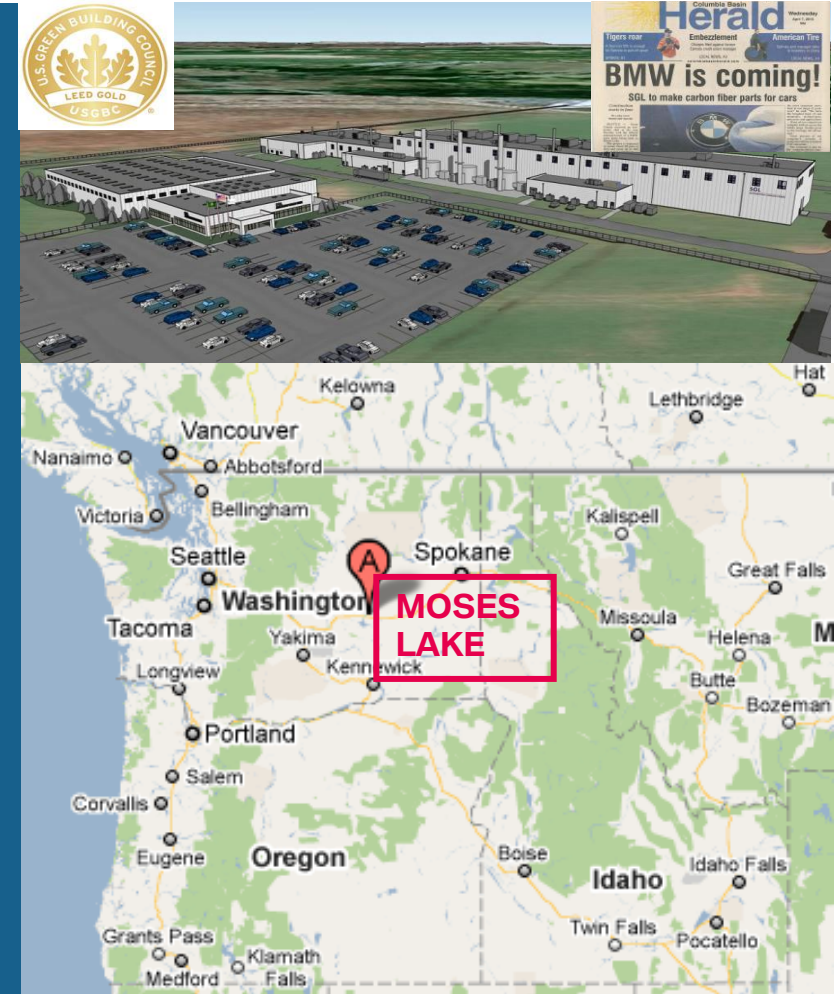
## The carbon fiber plant will be the most efficient and sustainable of its kind

### Main facts:

- Groundbreaking July 7, 2010
- Initial production capacity with 2 lines: 3,000 metric tons
- Production Building 1 finished in Q1/2011
- Delivery of production material to Wackersdorf in Q3/2011

### The decisive criteria for site selection:

- Availability of a sufficient supply of electrical energy from renewable sources (hydropower)
- Low cost of power supply





# Wackersdorf Plant – Non-crimp Fabrics and Recycling Material

## The Wackersdorf plant utilizes advanced textile manufacturing technology

### Main facts:

- Opening ceremony July 19, 2010
- Initial production capacity of fabrics: 3,000 metric tons
- Commissioning of recycling machinery in Q1/2011

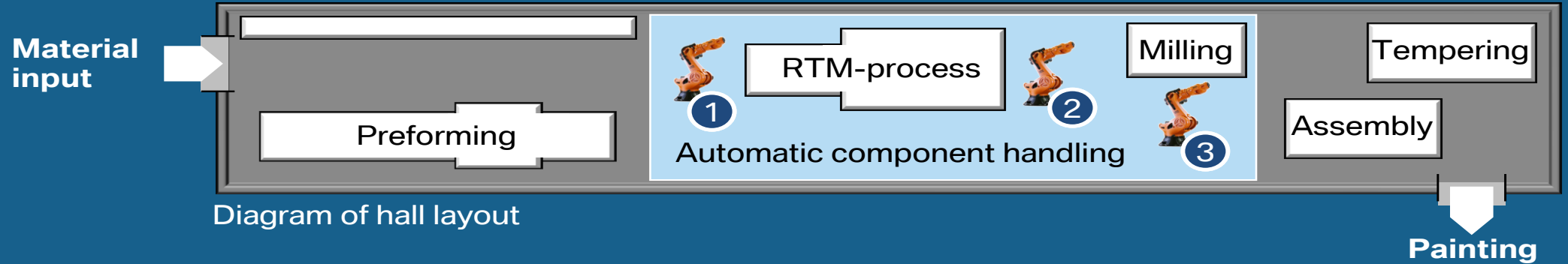
### The decisive criteria for site selection:

- Utilization of existing BMW facilities and infrastructure (only 3 months implementation time)
- Immediate vicinity to technology (BMW R&D departments)
- Qualified workforce



# Wackersdorf Plant – Non-crimp Fabrics and Recycling Material

## The manufactured fabrics are delivered to the CFRP production at BMW Landshut



① Insertion of preform



② Removal of component

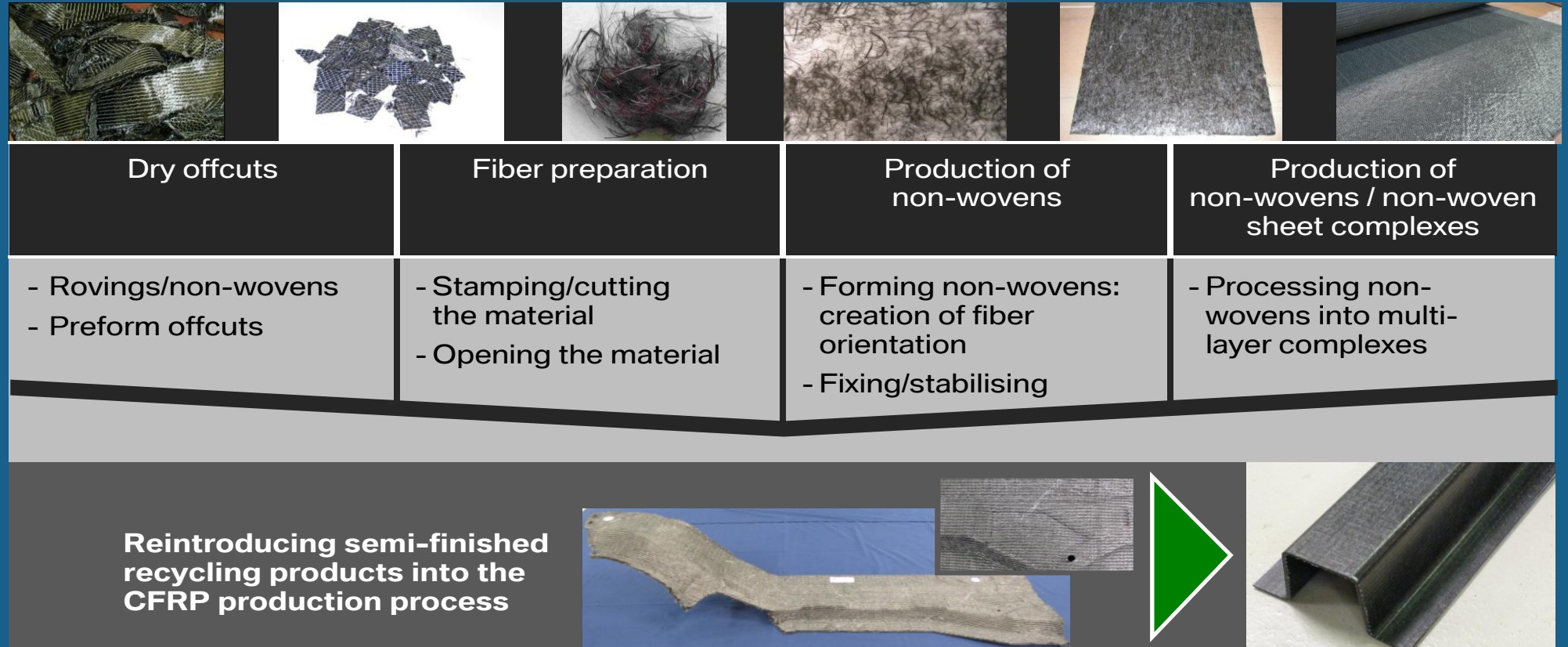


③ Milling



# Wackersdorf Plant – Non-crimp Fabrics and Recycling Material

The purpose of the recycling process is to reintroduce semi-finished recycling products into CFRP production





# Outlook and Challenges

- Decrease in sales price to BMW driven by significant improvement in production efficiency and economies of scale
- Identification of further sales price decrease potentials by employing alternative production technologies for specific automotive applications
- Expansion of the non-woven product portfolio including recycling material for use in other BMW automobiles

