

Biomethane – boosting efficient technology and creating demand

SEPURAN® Green

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EBA virtual conference

Evonik Operations GmbH
Jennifer Doerper



Agenda

1. Introduction about Evonik and creating demand for Biomethane
2. SEPURAN® Green membrane technology

That's specialty chemicals. And that's where we're among the best in class.

€13.1 billion

sales*

€2.15 billion

adjusted EBITDA*

€1.15

dividend per share

16.4%

adjusted EBITDA margin*

80%

of sales from
leading market positions

€842 million

capital expenditures

>32,000

employees

101

nationalities

€1.94

adjusted earnings
per share*

* Fiscal 2019, ongoing activities

No product is so perfect that you can't improve it.

more fuel-efficient



TIRES

fluffier



TOWELS

bouncier



MATTRESSES

healthier



NUTRITION

more effective

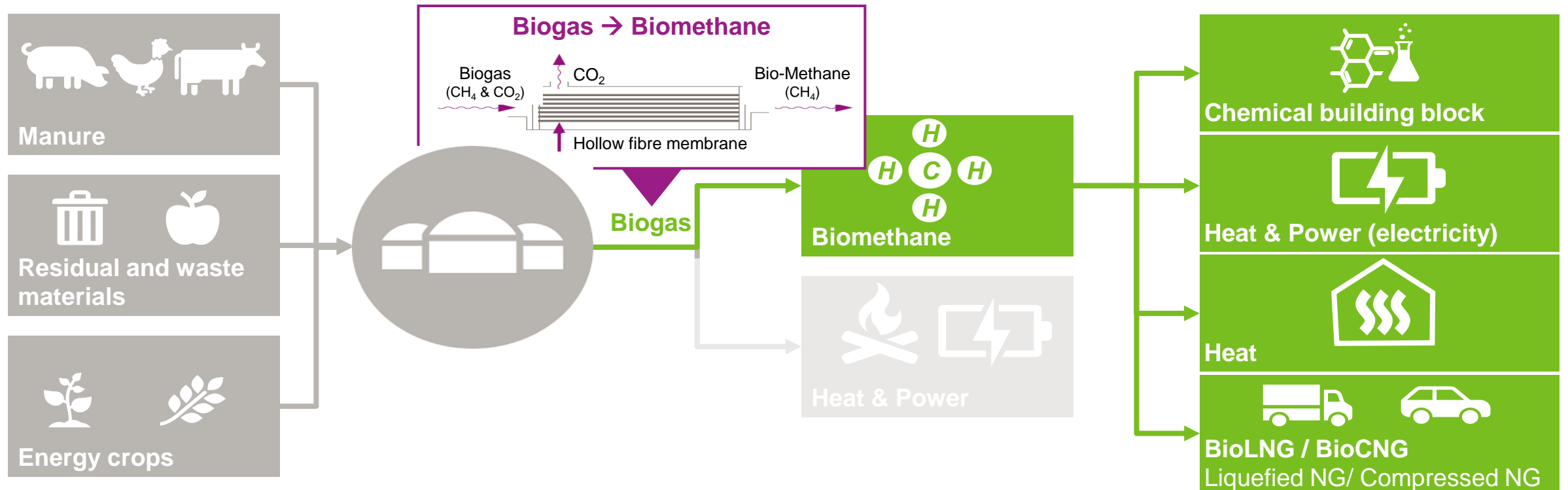


TABLETS

Our membranes are “made in Austria” at Evonik Fibres GmbH



Biomethane is the carbon neutral alternative that can be used as chemical building block, source for e-powerplants and as alternative fuel for transport



Biomethane is Methane produced in a more sustainable way. It has the same energy content as fossil based Natural gas. Due to it's origin and renewable character Biomethane reduces greenhouse gas emissions significantly.

Evonik is creating demand for Biomethane through internal and external communication

Evonik
walks
the talk!

Promotion of Green Gas Mobility in Germany via Influencer Marketing



A two years campaign dedicated to the German market



#notpasta

Viral enrolling of information about CNG mobility

#biomethane101

Educate the target group about biomethane and CNG mobility

#notpasta

#biomethane101 #testdrive
Transporting positive emotions to the subject



Promotion of Biomethane Evonik internally

- Evonik Fibres GmbH committed itself to **substitute 25% of its gas demand with local produced Biomethane** in the first place and has ambitions to gradually increase the share of Biomethane in the future
- Evonik is preferably transporting goods with **selected logistic partners using CNG/ LNG trucks**
- BL pushes for gas mobility in **own company cars**

Create motivation is essential that Biomethane becomes first choice over fossil based energy sources

**Biomethane needs to be seen equivalent to wind and solar!
Renewable energy is more than green electricity.**

Biomethane needs a clear carbon bonus!

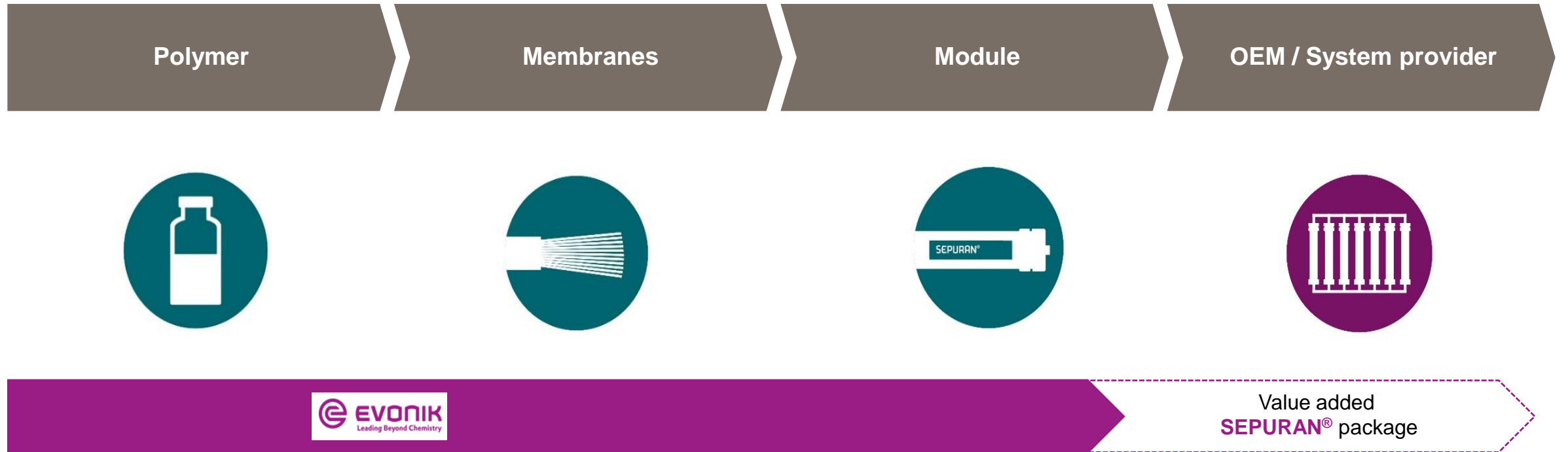
Simple – easy to apply – regulations European wide are appreciated!

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From a superior polymer solution to market leading position in biogas purification!

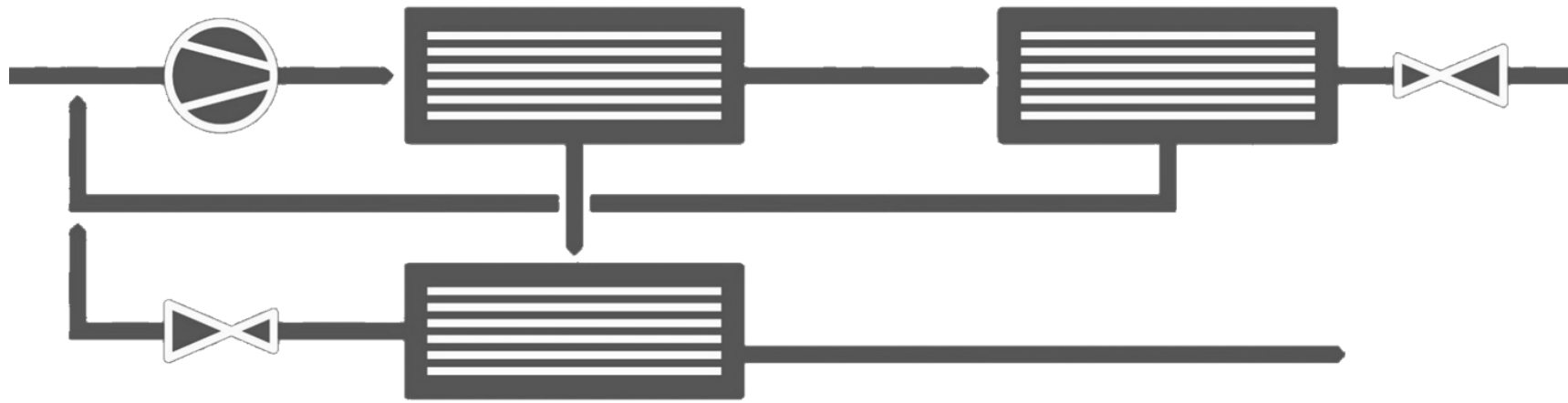


SEPURAN® Green and its evolutionary steps so far



Three stage biogas upgrading process patent with SEPURAN® Green is a game changer for biogas upgrading units

For the first time membrane technology could offer complete separation!



Three-stage process patent of Evonik



High selective membrane



One compressor only



Low energy consumption

Pre-justices about membrane technology!

“Membranes don’t last very long and are expensive”

- We expect a lifetime way beyond 10 years based on field experiences
- Best optimum between Capex and Opex (project related optimization possible)
- Already state-of-the-art and continuously developing

“Fragile technology, sensitive handling”

- Pre-treatment is a necessary element
- Various components like H₂S etc. cannot harm the membrane
- In case of a contamination thru the membrane, it can be recovered to original performance
- Very stable system, high uptime, simple to operate

“Only small scale plants are suitable sizes”

- Our 3 largest installations: 15,000 Nm³/h, 6,750 Nm³/h 5,340 Nm³/h
- 75 projects which are > 1,000 Nm³/h raw gas
- 400 references worldwide

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Leading Beyond Chemistry