CEO Torben A. Bonde
BioFuel Technology A/S
Kinetic BioFuel A/S

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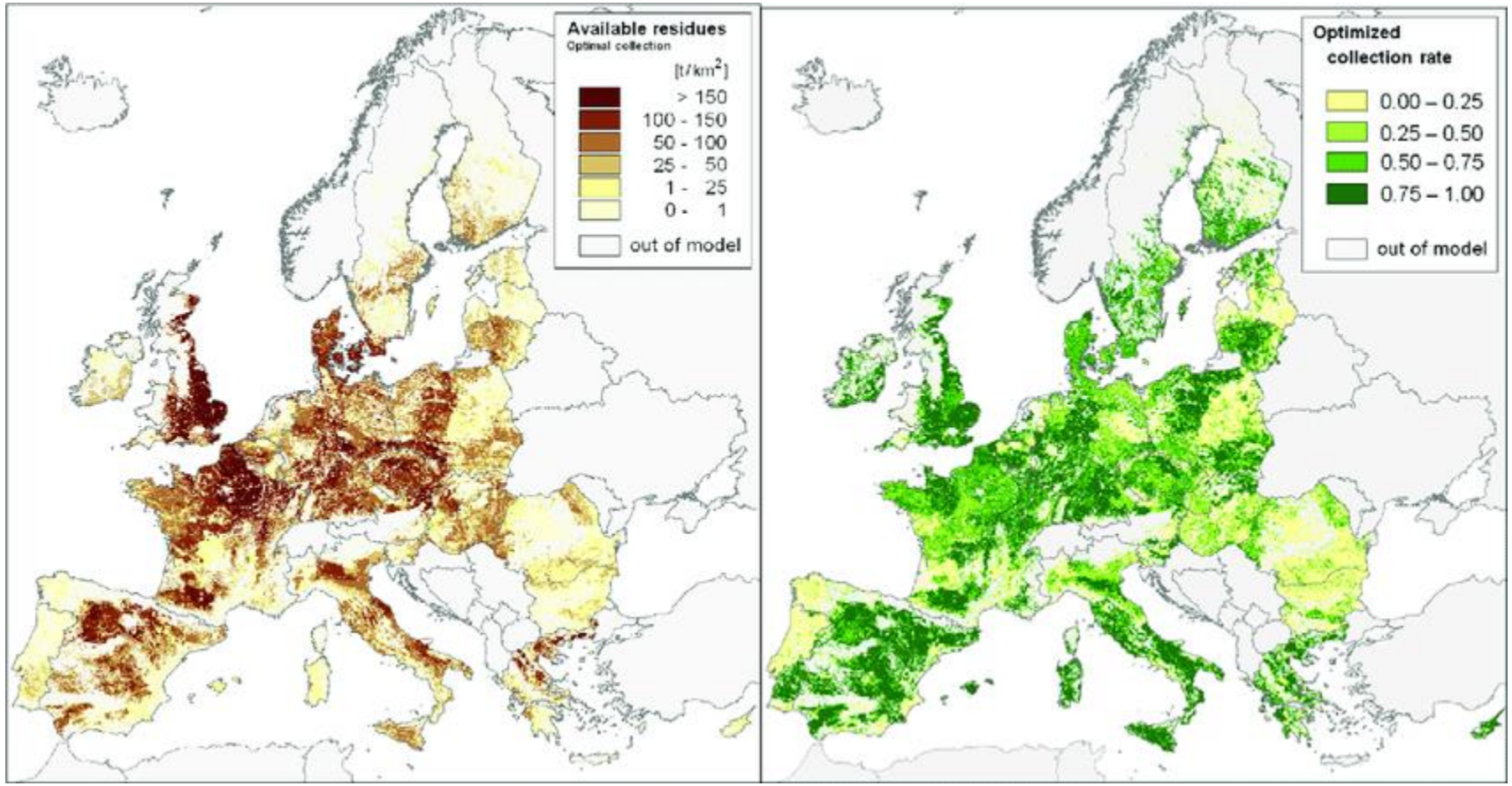
Agricultural residues in EU



Agricultural residues available for energy use in EU-27 in the assumption of optimal collection in t/km 2 (left)
and OC rates in terms of maximum fraction of residues available for collection (right). The resolution of both maps is 1 x 1 km.

The biomass key !

- The key to any an all bioenergy production is managing the biomass raw material !

- We provide that key through briquetting and satellite collection!

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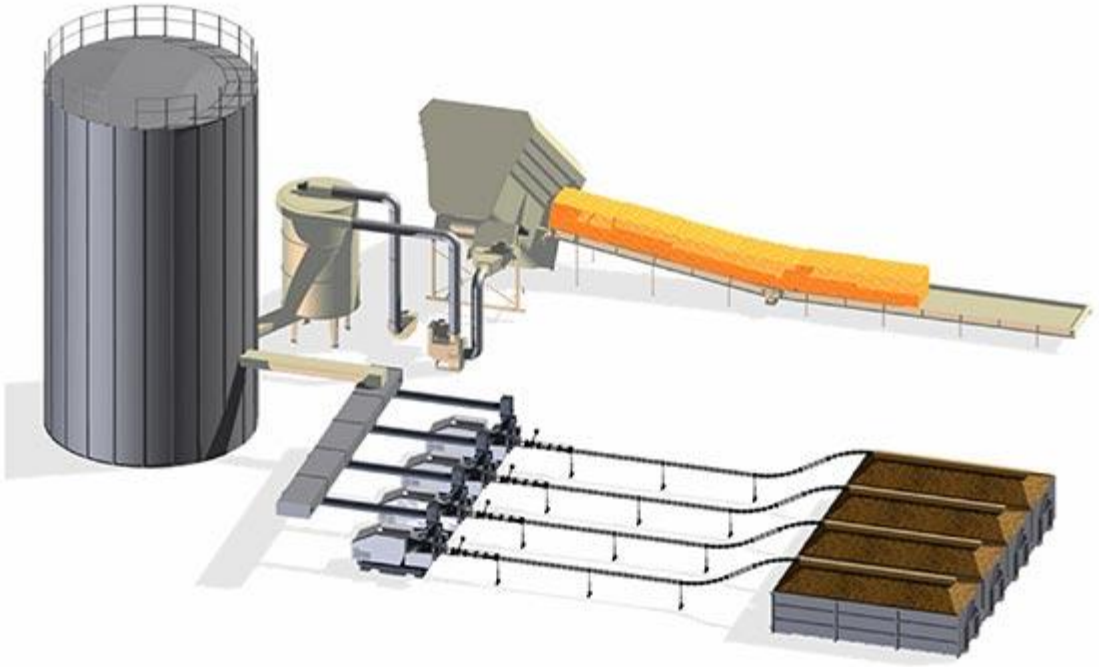
Compression and pre-processing!
Capacity 25-150.000 tons per year per station!



Supplier:

Kinetic BioFuel A/S
C. F. Nielsen A/S

www.kineticbiofuel.com
www.cfnielsen.com

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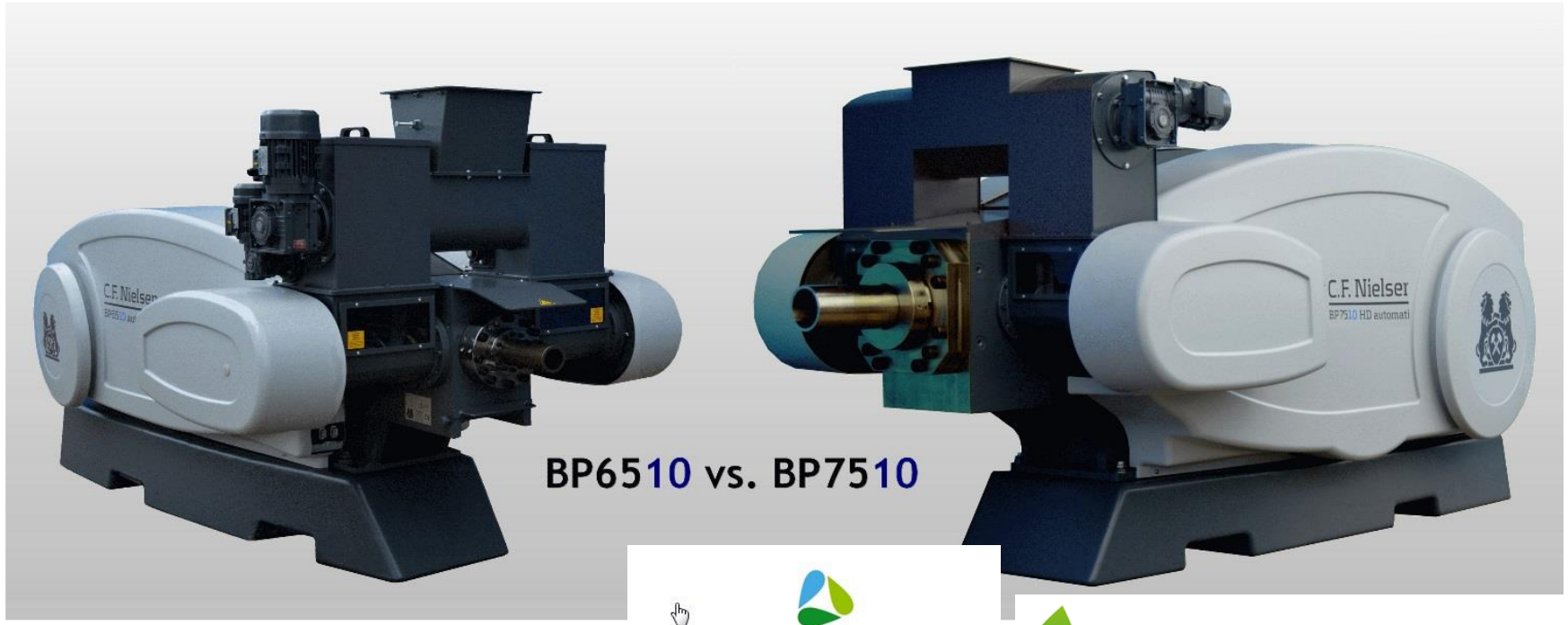

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Case Sheppey Island
Farm Renewables

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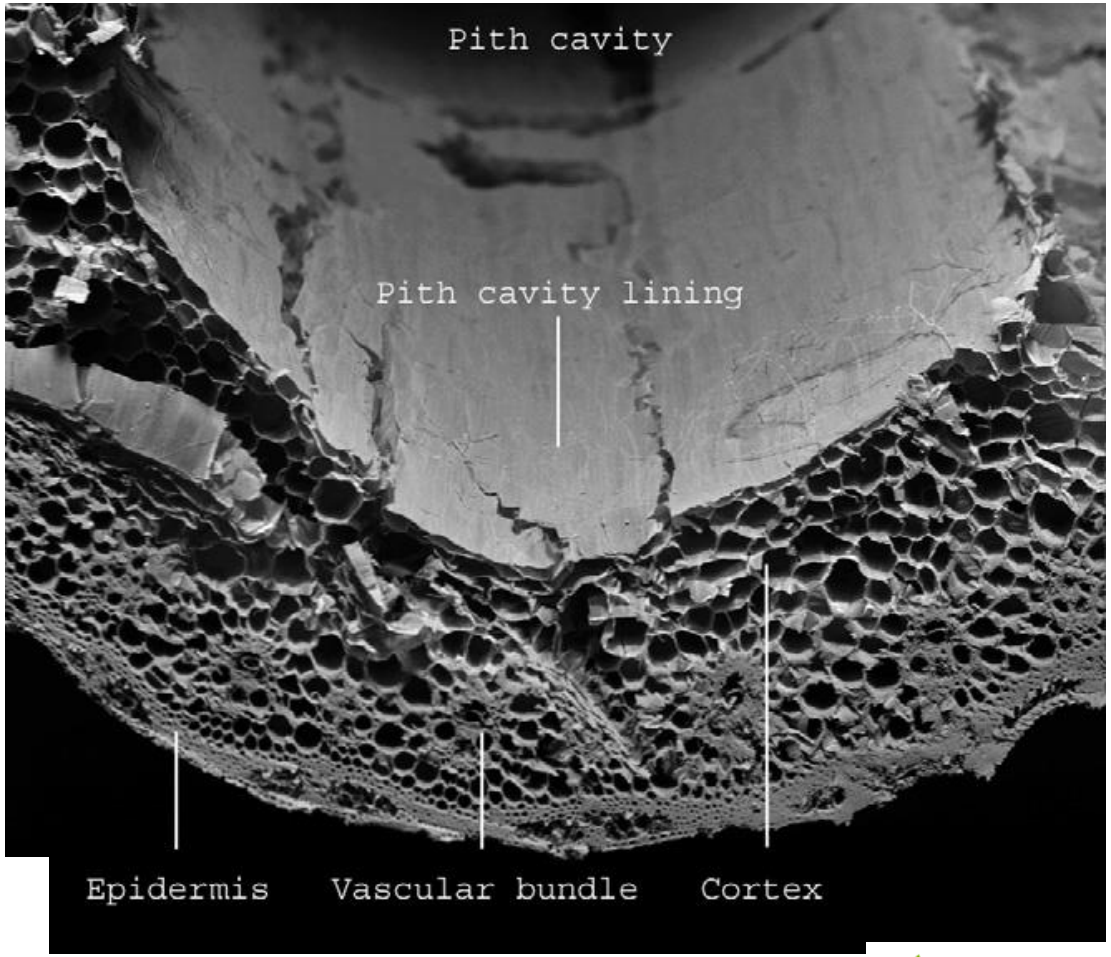
Straw, porous and water repellant !



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Straw rendered hjighly hydrophilic!

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Gas yields from straw as function of biogas processes!

The achieved gas yield from straw depends mainly on the type of biogas plant and its running mode as estimated (at app. 25°C and 20 MJ/kg VS gross energy):

Biogas plant type	Hydraulic residence time (days)	Methane yield (litre per kg VS)	Methane yield (Nm3 per tons straw)
Standard mesophilic	50-80	250	200
Standard thermophilic	30-50	300	250
Thermophilic plus hyper thermophilic	30-50	350	300
Expanded with recirculation	30-50	400	350
Advanced industrial	30	450	400
Straw total energy content		550	
Theoretical maximal methane production		500	450

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De nye muligheder med briketter: Ny grøn gas og olie industri!

Bio-metan		CH_4
Bio-kuldioxid (biogent CO_2)		CO_2
Bio-ethanol	(alkohol)	CH_3CH_2OH
Bio-methanol	(alkohol)	CH_3OH
Grøn diesel, jet fuel, og naphta	(kulbrinte)	$C_{12}H_{26}$
Grønne kemikalier (fra lignin)	(kulbrinte)	C_6H_{12}

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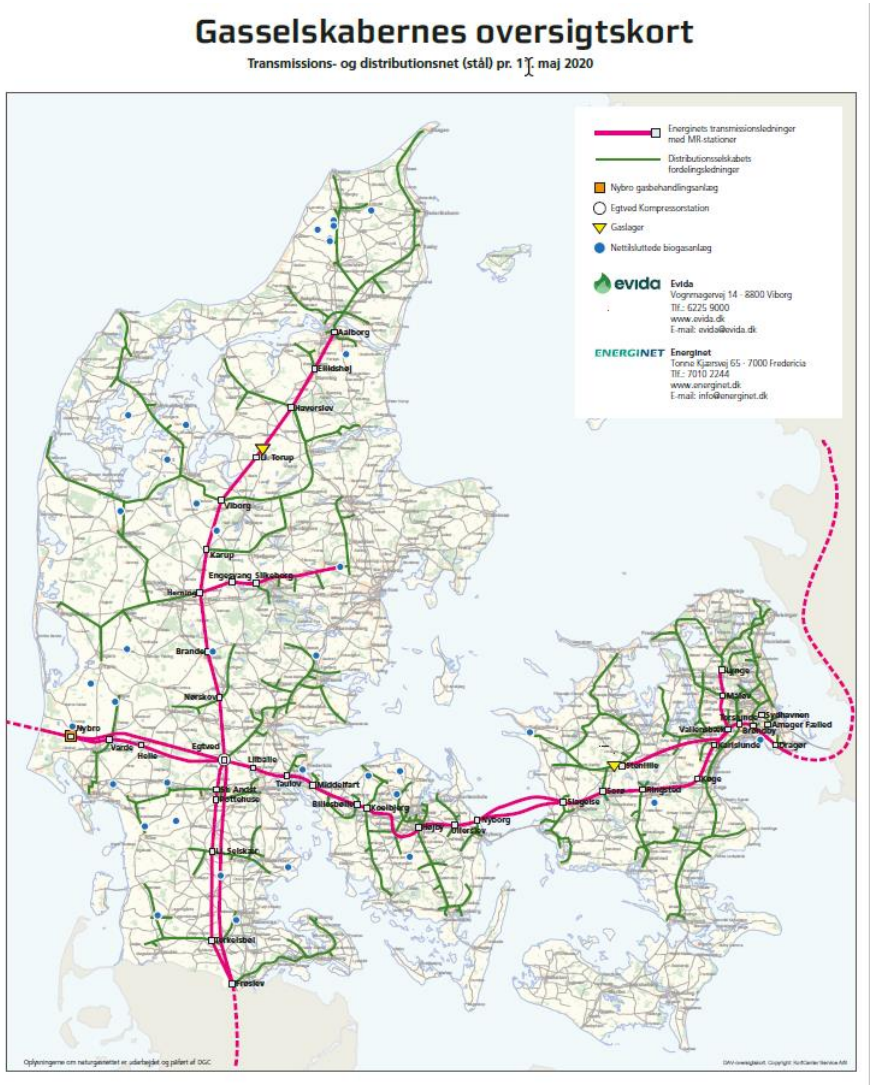
Nye halm-baserede projekter!



Vordingborg, biomethan, jetfuel
450.000 tons halm

Stigsnæs: Biomethan, bio-CO2
(150.000 tons halm)

Nakskov: Biomethan, methanol
(200.000 tons halm)

Grenå: Ethanol, methanol, LBG
(450.000 tons halm)

XX Østjylland: Diesel
6-700.000 tons halm

YY Østjylland: Methanol
300.000 tons halm

CO2 reduktion forbundet med grøn gas og olie.

1 tons halm giver:

Til biogas ca. 750 kg CO2 reduktion

Til grøn diesel ca. 1 tons CO2 reduktion

(inklusive brug af grøn strøm)

CO_2-emissionsfaktorer

CO_2-emissionsfaktorerne benyttet i ansøgningens fase 2 fremgår af Tabel 1. CO_2-emissionsfaktorne for de enkelte energiformer er fastsat efter Energistyrelsens årsstatistik samt Basisfremskrivning 2020 og tager afsæt i de forventede udledninger i 2030. CO_2-emissionsfaktorerne opdateres årligt.

Tabel 1: CO_2-emissionsfaktorer

Energitype	CO_2-indhold [kg/kWh]
El	0,012
Fjernvarme	0,032
Naturgas	0,204
LPG	0,227
Motorbenzin	0,263
Petroleum	0,259
Gas-/dieselolie	0,266
Fuelolie	0,286
Petroleumskoks	0,335
Stenkul	0,339
Koks	0,385
Halm	0
Skovflis	0
Træpiller	0
Træaffald	0
Affald	0,153

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Det danske potentiale – og klima mål!

Dansk halm produktion er cirka 6 millioner tons årligt (100 PJ)

Dansk flis produktion potentielt 5,5 mio. tons flis (60 PJ)

Denne biomasse bør prioriteres til produktion af grøn gas, brændstof og kemikalier.

Det er det primære alternativ til fossil gas og olie.

Dansk landbrug og skovbrug, Danmark, kan opnå fossil uafhængighed og CO2 mål via fokuseret anvendelse af biomasse til grønne produkter.

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