Opportunities for Biochar production and use in Finland – peat replacement ???

- Kari Tiilikala
- Natural Resources Institute Finland (Luke)
- Smartly from renewable resources: Efficiency to systems and utilization of by-product flows
- COST Meeting, WG4 + WG2 in Tartu (4-6 May 2015)
“Mixture of peat and Char” Patent for a product

- MTT developed for company VAPO
- 15 years ago, never commercialized
- “Long lasting growing media”
- Good structure and yield (tomato)
- Wood based char
"Vihreä Multa" new product to market in 2013 "type product" listed by Evira authority !!!!

- Biolan new product 2014, biochar
  (http://www.biolan.fi/suomi/default3.asp?active_page_id=186)
Sphagnum *moss*, new innovation

- VAPO, MTT, VTT
- Research project, presented by Eeva-Maria Tuhkanen
- Several SMEs
- IPR?
Biochar producers: One of them RKP Hiili Oy, biochar sold and transported in 2014 from Mikkeli to Stockholm (20 trucks)
Stockholm Biochar Project! Carbon neutral city!
Levi in Lapland, new carbon neutral development for tourism project 2015 - green roofs and slopes
Charcoal Finland Oy biochar producer, mobile retorts made by Raussi Metalli OY

Levi voinnallisuutta kannattaa, mutta matkailijoita näkökulmasta ja millaisia uusia palveluja alueen yritykset voisivat tuottaa voimametsä-verkostossa.

Hiihtä sitovaa sekä ravinteita ja vettä pidättävää biohiiltä. Pilotit toteutetaan yhdessä Levin yrittäjien kanssa.

Neljä työpajaa auttavat Levin yrittäjiä tunnistamaan uusia asiakkaita ja kehittämään palvelutuotteita.
Green roofs in Helsinki, run-off water management
MOBILE FLIP

Mobile and Flexible Industrial Processing of Biomass, EU project
http://www.mobileflip.eu/consortium.htm

Coordinator:
VTT TECHNICAL RESEARCH CENTRE OF FINLAND LTD
Finland

Participants:
Commissariat à l'énergie atomique et aux énergies alternatives
France
Institut technologique FCBA
(Foretcellulose Bois-Construction Aménagement)
France
Natural Resources Institute Finland
Finland
Swedish University of Agricultural Sciences
Sweden
SP Sveriges Tekniska Forskningsinstitutt AB
Sweden
BioGold OU
Estonia
Chimar Hellas AE
Greece
Raussin Energia Oy
Finland
Sweden Power Chippers AB
Sweden
AREVA Renouvelables SAS
France
RAGT Energie SAS
**About**

Reference: MOBILE FLIP 637020  
Budget: 9.8 million euro EC contribution  
Participants: 12 organisations, from five European countries  
Duration: January 2015 – December 2018  
Coordinator: Dr. Tarja Tamminen, VTT Technical Research Centre of Finland Ltd  
Topic: MOBILE FLIP relates to the topics addressed by the call for SPIRE - SUSTAINABLE PROCESS INDUSTRIES, Topic: SPIRE-02-2014 Adaptable industrial processes allowing the use of renewables as flexible feedstock for chemical and energy applications  
Type of action: Innovation Actions  

**MOBILE FLIP – Project summary**

MOBILE FLIP aims at developing and demonstrating mobile processes for the treatment of underexploited agro- and forest based biomass resources into products and intermediates. The processes will be evaluated in terms of raw material flexibility, as the biomass resources are typically scattered and seasonal. Process concepts have been designed around the key technologies pelletizing, torrefaction, slow pyrolysis, hydrothermal pretreatment and carbonisation. The products vary depending on the process concept, being typically fuels as...
Biochar as a filtration media, nutrient capture! Several SME consortiums and projects to come?
Nutrient cycling pyrolysis and or HTC ??

• Manure based
• Feedstock: residues of *biogas* plants.
• Led by Dr Kimmo Rasa, Luke
• Waste based ??

• Helsinki University:
• Helsinki and Lahti
Peat replacement:

- **Energy issue** in Finland! How to replace black coal > peat?
- Torrefied wood pellets? Biogas etc.
- Peat for Growing media OK in Finland, so far at least!
- 1/3 of peat resources/Europe in Finland, 1/3 of Finland is peat land!

Bog formation continues, small lakes, costal areas, 5 mm/year upthrust
FUTURE
Evidence based, business oriented development?

• substitute > to improve … making “carbon neutral GM??
• Economical, Environmental and Social sustainability !
• Commitments of many parties !
• Communication (Stakeholder engagement)

• Private sector ? Information needed?
• Executive director Teppo Rantanen will give an answer
• from Biolan Group/Novarbo/Biolan Baltics OÜ ?
Thank you!