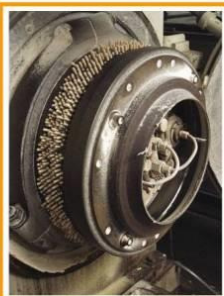




# SolidStandards

Enhancing the implementation of quality and sustainability standards and certification schemes for solid biofuels (EIE/11/218)



**D4.5b**  
**Workshop report**  
**24 October 2013**  
**Tampere, Finland**



## SolidStandards-project

The SolidStandards project addresses ongoing and recent developments related to solid biofuel quality and sustainability issues, in particular the development of related standards and certification systems. In the SolidStandards project, solid biofuel industry players will be informed and trained in the field of standards and certification and their feedback will be collected and provided to the related standardization committees and policy makers.

SolidStandards is coordinated by:

WIP Renewable Energies  
Sylvensteinstrasse 2  
81369 Munich, Germany  
Cosette Khawaja & Rainer Janssen  
cosette.khawaja@wip-munich.de  
rainer.janssen@wip-munich.de  
Tel. +49 (0)89 72012 740



## About this document

This document is part of **Deliverable 4.5** of the SolidStandards project. It is the summary report of the national workshop on sharing the experience on standards implementation. This document was prepared in **November 2013** by:

VTT  
P.O. Box 1603, FI-40101 Jyväskylä, Finland  
Office: Koivurannantie 1, FI-40400 Jyväskylä, Finland  
Eija Alakangas  
eija.alakangas@vtt.fi  
Tel. +358 20 722 2550

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## 1. Introduction

The workshop for presentation of the results for implementing standards (EN 14961-1, EN 14961-4 and EN 15234-4) was organised in part of Motiva's heating entrepreneurship days in a morning session. These heating entrepreneurship days were organised on 24 – 25 October 2013 in Tampere. This event was targeted to heating entrepreneurs, which are the main target group also for in SolidStandards project. Companies selected for WP4 (Quality standards implementation) and WP5 (sustainability) case studies (MHY Päijänne and Vakkalämpö Oy and Kyyjärvi energy cooperative) are also heating entrepreneurs. Addition to this event results of WP4 and WP5 were presented by VTT, MHY Päijänne and Kyyjärvi energy cooperative in wood chip standards training event on 9 – 10 April 2013 in Saarijärvi in Finland. (see D3.2 Summary of training events).

## 2. Participants

The workshop was attended by 49 persons including speakers. Most of the participants were heating entrepreneurs. In total 22 heating entrepreneurs were represented. Other participants were forestry centres, defence administration, regional authorities, research institutes and associations. Most of the representatives of forestry centres are also wood energy advisers helping new heating entrepreneurs to start their business and advising in fuel quality issues, too.

Participant list is presented in Appendix II.



*Audience in Heating Entrepreneurs' Day in Tampere on 24 October 2013. Photo: liris Lappalainen, Motiva Oy.*

### 3. Summary of the presentations

*Mr Juha Hiitelä* from Forestry Centre Pirkanmaa opened the workshop and told about wood energy promotion in Pirkanmaa region. During 1996 – 2012 has 43 heating entrepreneurs starting their operation and 75 GWh is produced heat by woody biomass. Entrepreneurs are using 40 000 solid m<sup>3</sup> wood (about 400 tons), which is 6% of the region's forest chip usage. Total output of these plants are 32 MW<sub>th</sub> and size of boiler is from 80 kW to 2.5 MW.

The programme in first day started with a session of fuel quality issues organised by VTT. In this session also SolidStandards project results of case study from MHY Päijänne and Vakkalämpö Oy was presented by Eija Alakangas and Matti Virkkunen from VTT.

In the first quality presentation *Mr Hannu Niemelä* from Tapio presented the Tapio's guidelines for wood chip production and effects to quality of wood chips. He pointed out that it is very important to make correct stockpiles for logging residues and small-sized trees. Firstly logging or small-sized stem wood need to be dried on stand 2 – 4 weeks and best drying season is from April to July in Finland. The aim is to reach 30 w-% moisture content. Dried wood will be piled near roadside to 5 x 6 metre piles and these piles should be covered by kraft paper. He also showed bad examples of piles.



*A proper wood fuel storage has 1) a cover made from kraftpaper; 2) base construction to create an airspace between the storage and the ground; 3) a peak to avoid rain pouring in from the front side, and 4) adequate height (4-5 metres).*

After that he also presented the main quality assurance issues of new Wood fuel guidelines (Alakangas, E. & Impola, R. Puupolttoaineen laatuohje, VTT-M-07608-13), which is applying EN-standards for wood fuels.

*Eija Alakangas and Matti Virkkunen* from VTT presented wood chips quality standards and also how to measure quality of wood chips at plant. Slides presented in the workshop are shown in App. 3.

Second session of the first day event included session on a profitability of heating entrepreneurship. *Hannu Niemelä* from TAPIO presented results of enquiry, which they have carried out for heating entrepreneurs and wood chip producers in North-Karelia. About 50% of interviewed companies are profitable. Also fuel quality issues were surveyed and found important.

*Riitta Backman* from TTS Institute gave a presentation of 30 heating entrepreneurs profitability based on accounts of these companies. It seems that profitability has increased within entrepreneurs during 2010 to 2012. Total turnover of these companies investigated were 30 – 40 M€.

*Markku Alm* from Centre of Economic Development, Transport and the Environment presented different public subsidy schemes. He pointed out the there is no chipper purchase subsidy available and district heating networks are not funded by the Ministry of Employment and Economy subsidies. Best possibility to get investment support for heating plants is the funding for rural area, which can give from 20 to 35% subsidy.

*Arto Kettunen* from TTS Institute presented new project USVA, which is improving RES value chains. Project has started recently so results were available.

*Petri Heikkilä* from Bio-Experts Oy presented their latest biomass boiler investments. Bio-Expert Oy is selling plants which are equipped with Schmid AG boilers. They sold wood chip and pellet boiler plants. *Mr Jani Kalmu* from RauHeat Oy presented their plastic district heating pipeline systems.

*Mr Jukka Korri* from TTS Institute presented new legislation for wood measurement (414/2013). This legislation is applied also for energy wood.

In the end of the day *Mr Kari Huttunen* from Defence administration presented their plans to invest new biomass plants in Finland. They are targeting to renovate 20 – 30 oil-heating plants to biomass. They will do 7 – 12 contracts with heating entrepreneurs. Target is to increase use of RES in 2016 by 70 – 80% in their heat supply.



*Wood chip feeding into a LAKA gasification boiler in the Pälkäne district heating plant. Photo: Iiris Lappalainen, Motiva Oy.*

## 4. Conclusions

The heating entrepreneurs' days gathered the most of heating entrepreneurs in Western Finland. Wood fuel quality issues are important for heating entrepreneurs to get their business profitability. If moisture content is high, output of the boiler and the boiler efficiency will decrease and more fuel is needed to produce the same amount of heat to the

consumers. Also the particle size of wood chip is important, because oversized particles can cause malfunctions in the fuel feeding system.

Heating entrepreneurs are not familiar with sampling and sample reduction principles, so this was found important new information from SolidStandards project to them. They also use 100 litres containers for a bulk density analysis. In the standard requested container size is 50 litres container, which is lighter and easier to handle at the plant.

Eija Alakangas pointed out that when you measure first bulk density and then divide sample to a moisture content sample (2 litres) by corning and quartering method it is easier. Heating entrepreneurs were wondering how much this takes time. One of the participants was using this method already and she estimated that it require 7 to 10 minutes. Also correct formula how to calculate net calorific value was presented.

The workshop was good summary of the current important issues for biomass heating managed by heating entrepreneurs. Fuel quality issues are always important issue for plant operation and successful management of heat production.

## Appendix I - Programme of the workshop for Heating Entrepreneurship Days 24 – 25 October 2013, Tampere

9.00	Coffee
9.30	Opening Motiva Oy
9.40	Current situation of heating entrepreneurship in Pirkanmaa Juha Hiitelmä, Forestry Centre Pirkanmaa
<b>Wood chip quality and standards</b>	
10.00	Quality of wood chips and storage of energy wood. How to maximize MWh? Hannu Niemelä, Tapio
10.20	Wood chip quality standards and implementation in heating entrepreneurship Eija Alakangas, VTT, SolidStandards project
10.40	Applying wood chip standards – case MHY Päijänne and Vakkalämpö Oy Matti Virkkunen, VTT, SolidStandards project
11.10	Lunch
<b>Heating entrepreneurship</b>	
12.10	Views of heating entrepreneurship in North Karelia Hannu Niemelä, Tapio
12.30	Profitability of heating entrepreneurship – analysis of 30 companies Riitta Backman, TTS Institute
12.50	Future subsidies and development prognosis of heating entrepreneurship Markku Alm, Varsinais-Suomen ELY-keskus
	Break
<b>Presentations of companies and projects</b>	
13.15	Value chains and business models of heating entrepreneurship USVA-project presentation Arto Kettunen TTS Institute
13.30	Bio-Expert Oy, Petri Heikkilä Rauheat, Jani Kalmu
14.00	Coffee break
<b>Current actual issues</b>	
14.30	Degree of wood measurement: effect to entrepreneurship Jukka Korri, TTS Institute
15.20	Discussions in working groups
16.00	Summary of working group discussions
16:30	End of first day
25 October from 9 to 11.30	Study visits to wood fuel terminal of Pirkanmaa forestry management association and Pälkäne district heating plant

## Appendix 2. List of participants

- |                                      |                                       |
|--------------------------------------|---------------------------------------|
| 1. Alakangas Eija (speaker)          | VTT                                   |
| 2. Alanen Veli-Matti                 | Puuwatti Oy                           |
| 3. Alm Markku (speaker)              | Varsinais-Suomen ELY-keskus           |
| 4. Asell Janne                       | Kavo Oy                               |
| 5. Backman Riitta (speaker)          | TTS tutkimus                          |
| 6. Heikkilä Petri (speaker)          | Bio-Expert Oy                         |
| 7. Heinonen Konsta                   | Kojonkulman Hake Oy                   |
| 8. Hiitelä Juha (speaker)            | Metsäkeskus Pirkanmaa                 |
| 9. Hollmén Manu                      | PrizzTech Oy                          |
| 10. Huttunen Kari (speaker)          | Puolustushallinnon Rakennuslaitos     |
| 11. Heikkilä Tuula                   | Bio-Expert Oy                         |
| 12. Hämäläinen Laura                 | Itä-Savon Lähienergia Oy              |
| 13. Högnabba Stefan                  | Kronoby Energiandelslag               |
| 14. Kahilainen Timo                  | KS laatuenergia Oy                    |
| 15. Kalli Samu                       | Kavo Oy                               |
| 16. Kalmu Jani (speaker)             | Rauheat Oy                            |
| 17. Kauppinen Veli-Pekka             | Metsäkeskus Keski-Suomi               |
| 18. Keisola Mikko                    | Vihdin Energia Oy                     |
| 19. Kettunen Arto (speaker)          | TTS tutkimus                          |
| 20. Koisti Olli-Pekka                | Metsäkeskus Häme-Uusimaa              |
| 21. Kontulainen Jukka                | ProAgria Satakunta                    |
| 22. Korri Jukka (speaker)            | TTS tutkimus                          |
| 23. Laitinen Henry                   | Jyväskylän ammattikorkeakoulu         |
| 24. Lappalainen Iiris (photographer) | Motiva Oy                             |
| 25. Liimatainen Jarno                | Jyväskylän ammattikorkeakoulu         |
| 26. Loipponen Anssi                  | Itä-Päijänteiden puunkorjuu           |
| 27. Lähteenmäki Ari                  | Metsäkeskus Pirkanmaa                 |
| 28. Maunula Lasse                    | Metsäkeskus Pirkanmaa                 |
| 29. Moisio Simo                      | Traktoripalvelu Moisio Oy             |
| 30. Moisio Tuomo                     | Traktoripalvelu Moisio Oy             |
| 31. Mäkinen Johannes                 | HonkaEnergy Oy                        |
| 32. Määttä Timo                      | Motiva Oy                             |
| 33. Niemelä Hannu                    | Metsätalouden kehittämiskeskus Tapio  |
| 34. Nummela Jorma                    | Euran Energia Oy                      |
| 35. Ojakoski Perttu                  | Metsäkeskus Pirkanmaa                 |
| 36. Ovaskainen Jarmo                 | Paahtopuu Oy                          |
| 37. Peltomaa Petri                   | Rauheat Oy                            |
| 38. Sivonen Kirsi (organiser)        | Motiva Oy                             |
| 39. Sokkanen Pekka                   | Metsäurakointi Sokkanen Pekka         |
| 40. Somerpelto Jussi                 | Metsäkeskus Lounais-Suomi Oy          |
| 41. Tuohiniitty Hannes               | Bioenergia ry                         |
| 42. Utriainen Iiris                  | Energiatuote UTRIAINEN OY             |
| 43. Utriainen Mika                   | Energiatuote UTRIAINEN OY             |
| 44. Valtonen Jari                    | Metsä-Valtonen Oy                     |
| 45. Vehmaa Simo                      | Airanteen Energia Oy                  |
| 46. Viirimäki Juha                   | Metsäkeskus Etelä- ja Keski-Pohjanmaa |
| 47. Virkkunen Matti (speaker)        | VTT                                   |
| 48. Vuorio Kari                      | TTS tutkimus                          |
| 49. Ämmälä Marko                     | Metsäkeskus Etelä- ja Keski-Pohjanmaa |