

TFTEI

Under the Convention on Long Range Transboundary Air Pollution

## Task Force on Techno-Economic Issues

“Code of good practice for solid-fuel burning  
and small combustion installations based on  
BAT)”

*Tiziano PIGNATELLI (Italy)*

*Co-Chair TFTEI*

# Workplan 2018-2019

TFTEI

Following the recommendations of the Policy Review Group (PRG) of the LRTAP Convention

## ***Item 2.3.8 -***

***Description*** - Integration of additional measures in the TFTEI Clearing House for Control Technologies, and ***development of a code of good practice for solid-fuel burning and small combustion installations based on BAT***

## ***Deliverables***

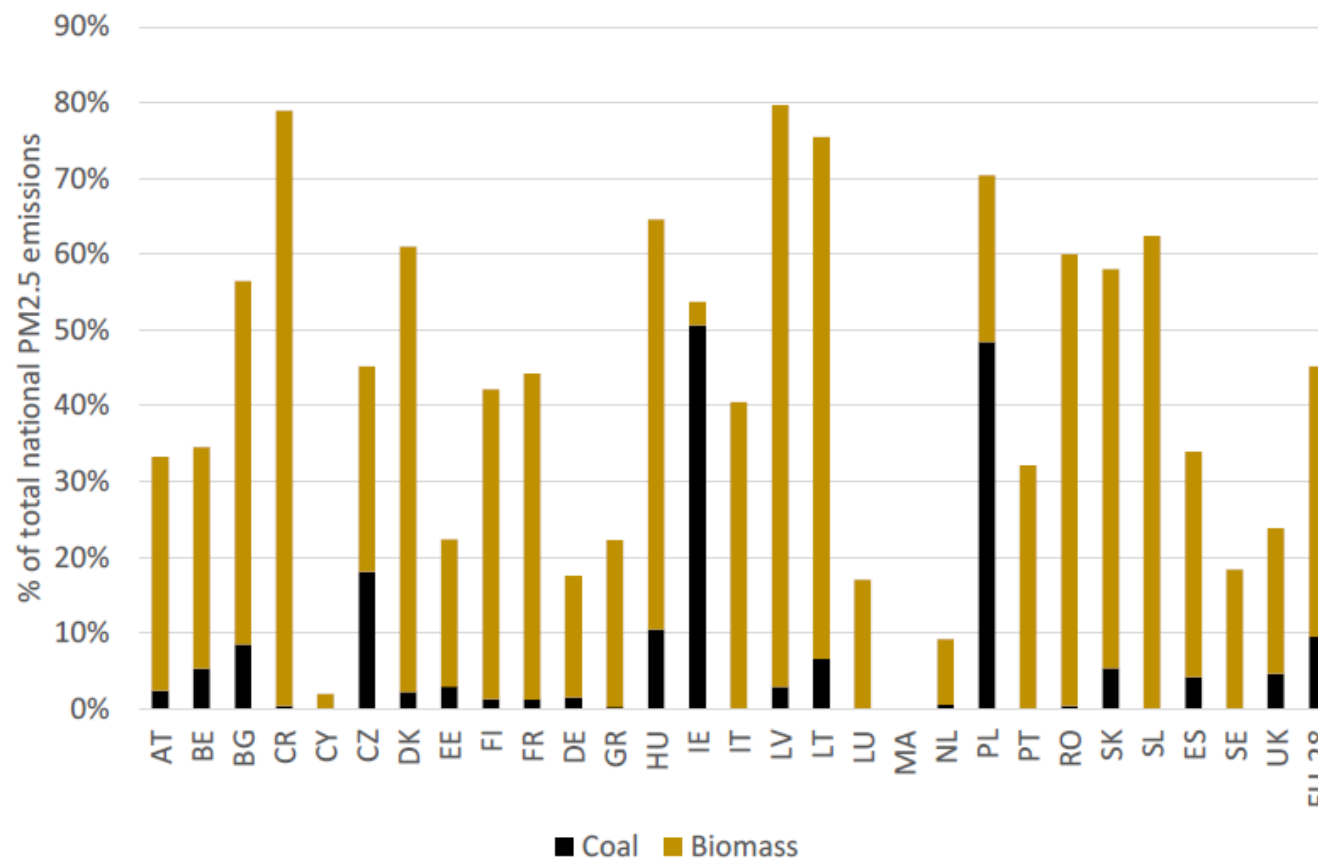
Update of the TFTEI database; ***draft code of good practice for solid-fuel burning and small combustion installations based on BAT***

***To be submitted to WGSR\_57 in May 2019***



# Why emission reductions from small combustion installations in the residential sector, are important ?

T F T E I



*Contribution of Household Heating to PM<sub>2.5</sub> total emissions in EU (Report by IIASA, february 2018)*

Workshop for EECCA Countries– Berlin, May, 14 – 16, 2019

## Why the issue should be of interest for EECCA countries ?

T F T E I

Reduction of PM<sub>2,5</sub> emissions from the sector of residential heating may be helpful to be closer to the Gothenburg Protocol provisions and facilitate the signing/ratification.

The reduction of PM<sub>2,5</sub> and other harmful pollutants (PM<sub>10</sub>, BC, PAH, B(a)P) reduces the risk of negative effects on the human health and the environment. Since BC is a Short Lived Climate Pollutant (SLCP), synergy with the Climate Change exists.

Many measures linked with good practice are related with behavioral aspects of final users and therefore are easy to implement and often costless.



## Two complementary approaches to the emission reduction in domestic heating

T F T E I

*Measures to address air pollution from small combustion sources (Report IIASA – february 2018)*

### *Technology*

“End-of-pipe technologies, i.e. electrostatic precipitators, might be foreseen for existing facilities, however, shorter intervals for maintenance and regular checks for appropriate fuel have to be considered “

### *Good practice*

“Additionally, emissions can be reduced by changing the way wood is ignited, i.e., starting the fire on the top of the fuel stack; awareness campaigns could help to disseminate information about such practice. “



# Code of good practice for solid-fuel burning and small combustion installations based on BAT

T F T E I

## *Main Objectives*

Provide all the Parties of the Convention with a reference guidance document, useful to develop informative material, at national level.

Provide a guidance based upon good practice, with practical information aimed at improving the efficiency of combustion of wood in small combustion installations for domestic heating.

Reduce PM, BC, PAH, B(a)P and other combustion pollutant emissions and related impact on environment and human health. As effect of the improved efficiency, the reduced BC emissions result in benefits also on Climate Change.



# Code of good practice for solid-fuel burning and small combustion installations based on BAT

T F T E I

## *Development of the Code*

The drafting of the code started on the basis of existing guidance documents developed by the Regional Environment Protection Authorities of some Italian Northern Regions, re-elaborated by ENEA (Italy) experts. Attention is focused on the small combustion installations, with power **not larger than 100 kW**. Draft presented at WGSR\_56. The final document presented at WGSR\_57.

The finalization of the code has been achieved through integration of contributions both from the experts of the Task Force and the experts from the whole Convention who wanted to contribute (Austria, Belarus, Belgium, Germany, Poland, Sweden, Switzerland, Ireland, US, Canada).



# Code of good practice for solid-fuel burning and small combustion installations based on BAT

T F T E I

## *What you find in the document*

- Preface
- Subject matter and scope
- Definitions
- Overview of existing guidance documents in several countries
- Key information and considerations
- Good practices for domestic wood heating
  - ***Recommendations on : plant choice, fuel choice, fuel loading, firing, combustion, maintenance***
- Paragraph dedicated to the EECCA countries
- Section on “Best Available Techniques in SCI “
- Conclusions and further recommendations





# Code of good practice for solid-fuel burning and small combustion installations based on BAT

T F T E I

## *Examples of recommendations – Fuel Choice*

Burn dry seasoned wood. **Dry wood** lights up and burns easily while, with the increasing of percentage of **humidity content** in the wood, the ignition becomes more difficult.

**Do not burn wet or green unseasoned wood** (more smoke is generated in these cases). The wood properly seasoned is darker, shows some slits on the logs and generates an empty sound when hitting against other logs.

For wood collected by end-users, it is recommended to **leave it to dry, at least for 1 or 2 years**, before using it for burning. Smaller logs allow a better storage before the use and a better combustion, in general.

The application of the above recommendations is an example of costless measures.



## Code of good practice for solid-fuel burning and small combustion installations based on BAT

T F T E I

### *Examples of recommendations – Fuel Choice (cont'd)*

**Use logs of similar size**, preferably split rather than in round logs. Split wood seasons faster than whole wood.

**Use split wood logs of proper size that fit in the firebox**, avoiding logs **longer than 40 cm** and **wider than 15 cm**. Smaller logs allow a better storage before the use and a better combustion, in general.

**An open space** between the wall of the combustion chamber and the wood logs should also be left to facilitate the combustion.

**Avoid, discourage or forbid the use of composite and treated wood**, (i.e. waste wood from building demolition or renovation, wood for packaging, etc.), because the combustion of such generates emissions of harmful and toxic substances.



# Code of good practice for solid-fuel burning and small combustion installations based on BAT

T F T E I

## *Examples of recommendations – Fuel Loading and Lighting*

Good quality combustion needs the **correct loading** of the fuel wood.

When the combustion chamber is narrow the wood logs should be loaded “**front head**” and **horizontally**.

Othewise, when the combustion chamber is narrow but high, then the wood logs should be loaded **vertically**.

**Light the fire from above** (vertically). Use **dry kindling (dry sticks)** or **natural firelighters** as flammable material to start the fire at the top. .

The **use of newspaper** for lighting should be **always avoided**.



# Code of good practice for solid-fuel burning and small combustion installations based on BAT

T F T E I

## *Conclusions*

The Code of Good Practice is thought to have the largest applicability within the geographical scope of the Convention.

The implementation of the Code of Good Practice is expected to result in significant emission reductions from the sector.

Many of the recommendations proposed in the code are at low cost or even costless.

The implementation of the code in EECCA countries may allow to get closer to the GP provisions.



# Task Force on Techno-Economic Issues

TFTEI

You are welcome to visit the TFTEI Official web site:



## О нас

В декабре 2014 г. на 33-й сессии Исполнительный орган Конвенции о трансграничном загрязнении воздуха на большие расстояния (ТЗВБР) Европейской экономической комиссии ООН (ЕЭК ООН) утвердил преобразование Группы экспертов по технико-экономическим вопросам (ГЭ ТЭВ) в Целевую группу по технико-экономическим вопросам (ЦГ ТЭВ) (см. мандат ниже) и вхождение в состав ЦГ ТЭВ прекративших свою деятельность Целевой группы по тяжелым металлам и Целевой группы по СОЗ ([решение ИО 2014/2](#)). Бывшая Группа экспертов по технико-экономическим вопросам (ГЭ ТЭВ) была создана ИО в декабре 2001 г. в ответ на предложение [Министерства экологии, устойчивого развития и энергетики Франции \(МЕДДЕ\)](#).

Целевая группа отчитывается перед Рабочей группой по стратегиям и обзору (РГСО) на ежегодных сессиях РГСО (<http://www.unece.org/env/lrtap/workinggroups/wgs/welcome.html>).

ЦГ ТЭВ возглавляют Франция и Италия, которые совместно отвечают за руководство деятельностью группы. Италия стала сопредседателем в 2006 г. по приглашению Франции.

Сопредседателями ЦГ ТЭВ являются Жан-Ги Бартэр ([ЭДФ – Электрисите де Франс](#)) и Тициано Пиньятели ([Итальянское национальное агентство по новым технологиям, энергетике и устойчивому экономическому развитию \(ЕНЕА\)](#)).

Workshop for EECCA Countries– Berlin, May, 14 – 16, 2019



Bundesministerium  
für Umwelt, Naturschutz  
und nukleare Sicherheit

# Task Force on Techno-Economic Issues

TFTEI

You are welcome to visit the TFTEI Official web site:

<http://tftei.citepa.org/ru/> (Russian Language)

<http://tftei.citepa.org/en/> (English Language)

Download here the Code in Russian Language:

[https://www.unece.org/fileadmin/DAM/env/documents/2019/AIR/WGSR/ECE\\_EB.AIR\\_WG.5\\_2019\\_4-1902864R.pdf](https://www.unece.org/fileadmin/DAM/env/documents/2019/AIR/WGSR/ECE_EB.AIR_WG.5_2019_4-1902864R.pdf)

Thank you for your attention !

**Спасибо за внимание**

---

Workshop for EECCA Countries– Berlin, May, 14 – 16, 2019



Bundesministerium  
für Umwelt, Naturschutz  
und nukleare Sicherheit