Review of Work Packages: CombNet

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ThermalNet
PyNe/GasNet/CombNet

Procedure

Step 1: Inventory of issues from work package descriptions

Step 2: Inventory of the contribution of these issues to:
- Pyne
- GasNet
- CombNet
- More or All

When contribution is not clear: own interpretation

Step 3: Combine CombNet issues

Step 4: Prioritizing the issues

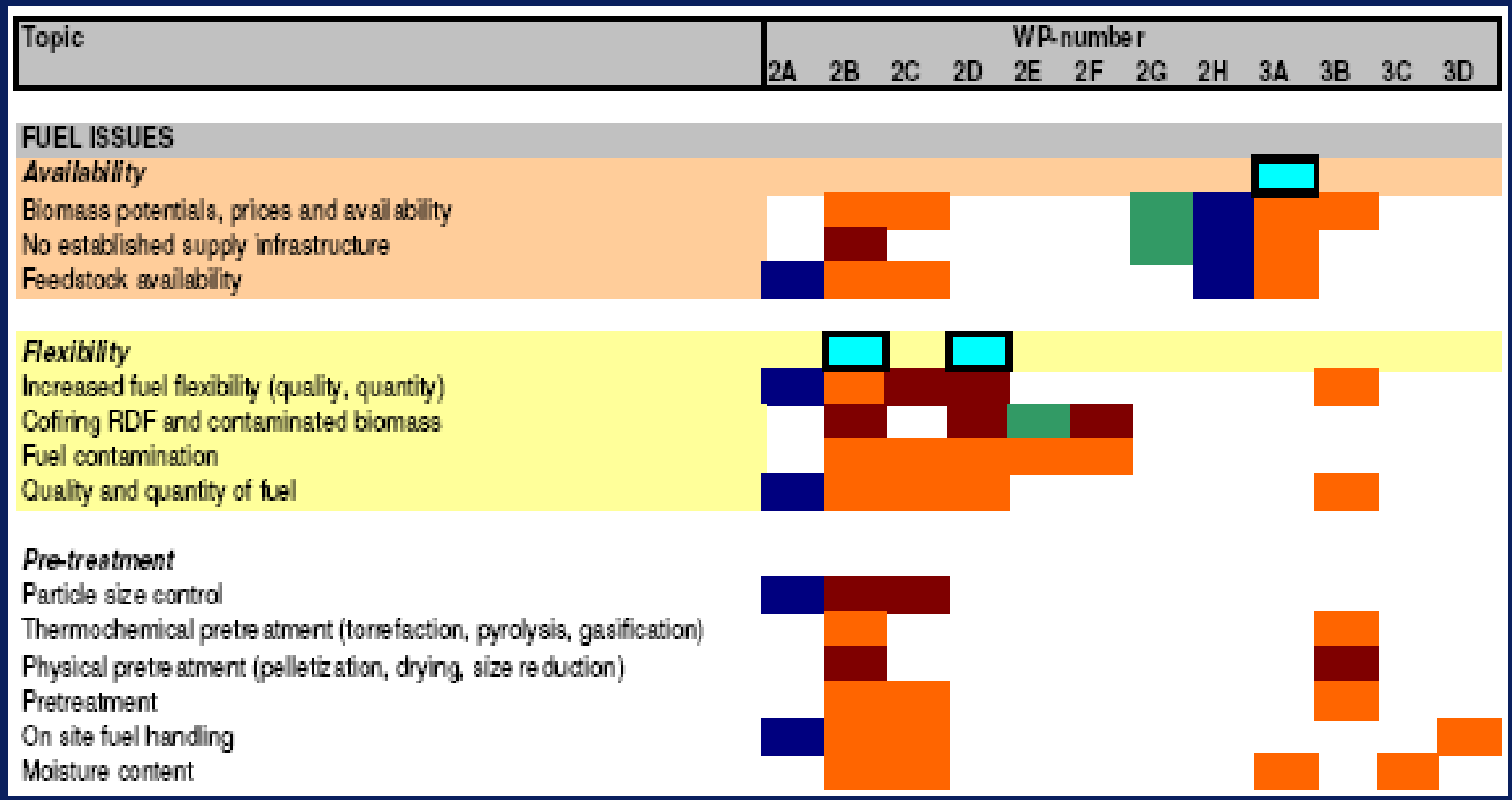
Step 4: Suggestions for work programme

Results: CombNet Issues (1)

- Fuel Issues
  - Availability
  - Flexibility
  - Pre-treatment
- Boiler side issues
- Fundamental issues
- Environmental issues:
  - Add-on technology
  - Ash
  - General issues
- Non-technical issues
  - Economic issues
  - Legislation / Policy
  - Market / Funding
  - Public perception / Education

Results

(2)


Topic
WP-number
2A 2B 2C 2D 2E 2F 2G 2H 3A 3B 3C 3D
FUEL ISSUES
Availability
Biomass potentials, prices and availability
No established supply infrastructure
Feedstock availability
Flexibility
Increased fuel flexibility (quality, quantity)
Cofiring RDF and contaminated biomass
Fuel contamination
Quality and quantity of fuel
Pre-treatment
Particle size control
Thermochemical pretreatment (torrefaction, pyrolysis, gasification)
Physical pretreatment (pelletization, drying, size reduction)
Pretreatment
On site fuel handling
Moisture content

Results

(3)

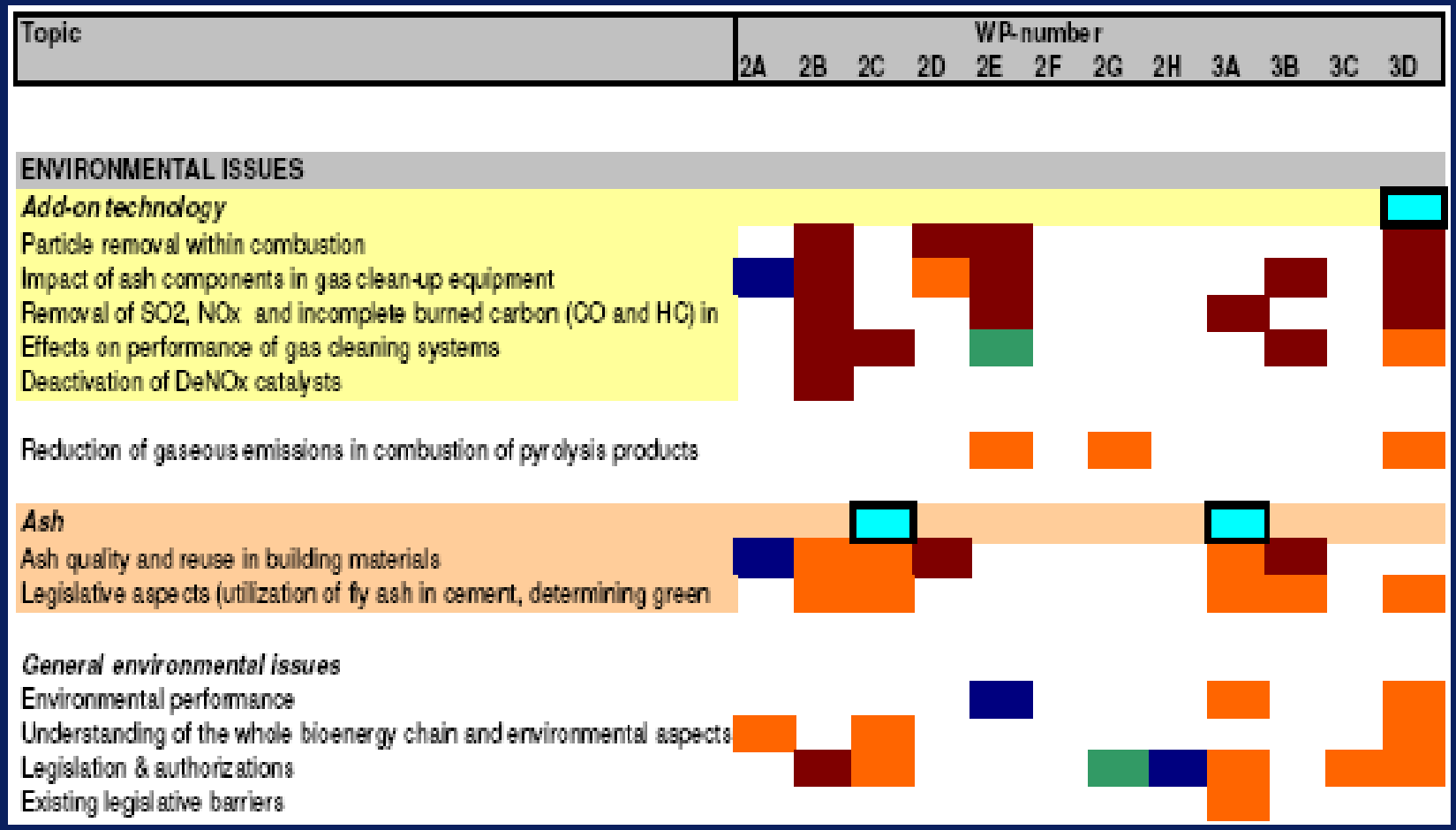
Topic	WP-number											
	2A	2B	2C	2D	2E	2F	2G	2H	3A	3B	3C	3D
BOILER SIDE ISSUES												
Fouling and corrosion of the boiler (alkali and other metals, chlorine)												
Fouling and corrosion of the boiler												
Gas-side corosion of high temperature components												
High temperature steam boilers												
Behavior of biomass ashes at elevated temperatures												
Ash characteristics												
Particle burn-out and gas mixing												

Results

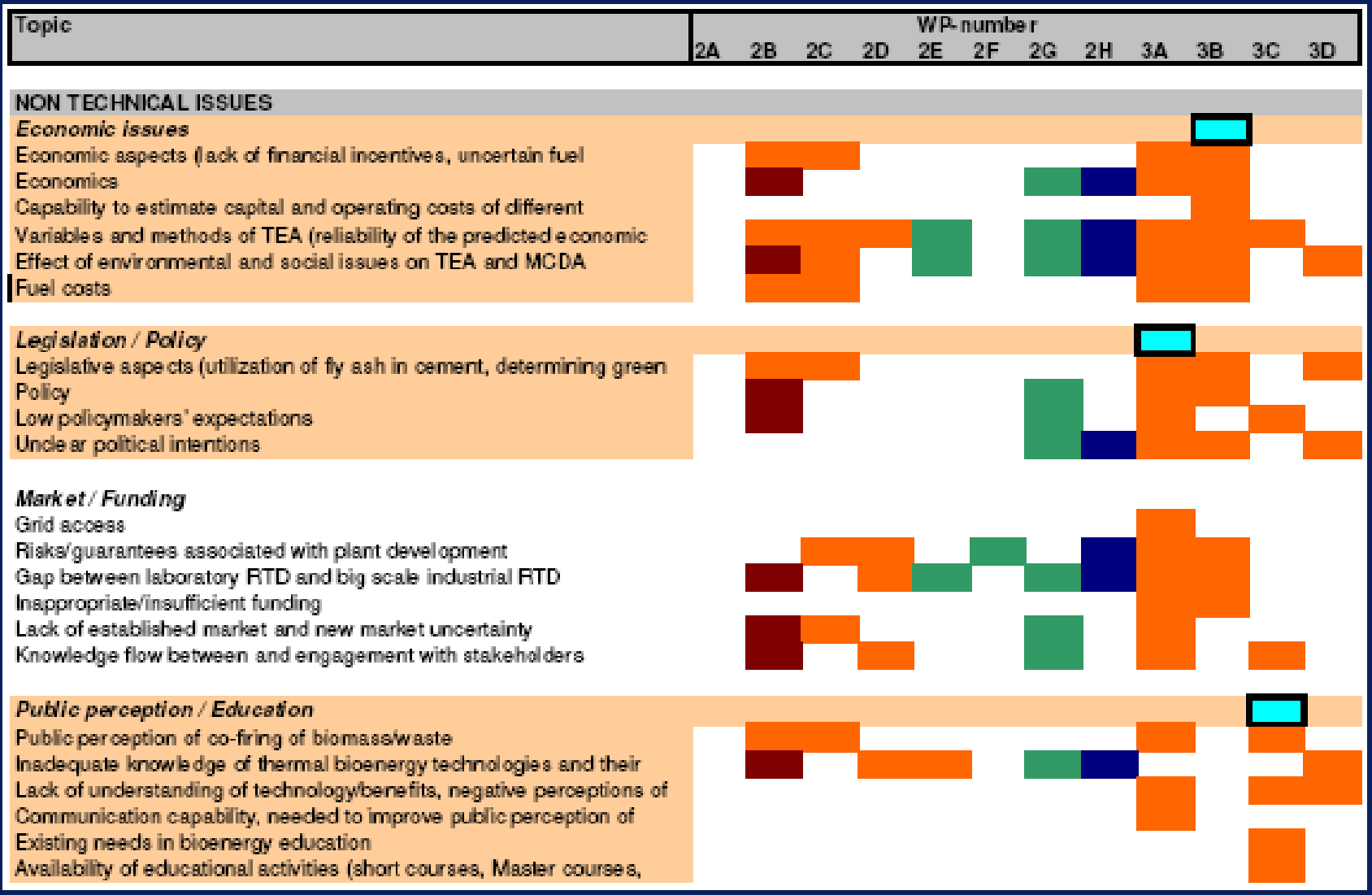
(4)

Topic	WP-number											
	2A	2B	2C	2D	2E	2F	2G	2H	3A	3B	3C	3D
FUNDAMENTAL ISSUES												
Comprehensive assessment about the actual scientific knowledge on												
Research activities on fundamentals												
Experimental methodologies												
Solid fuel reactivity												
Chemical kinetics												
Transport models for chemical reactors												
Transport models for single particles												
Research activities on technologies												

Results


Topic
WP-number
2A 2B 2C 2D 2E 2F 2G 2H 3A 3B 3C 3D
ENVIRONMENTAL ISSUES
Add-on technology
Particle removal within combustion
Impact of ash components in gas clean-up equipment
Removal of SO2, NOx and incomplete burned carbon (CO and HC) in
Effects on performance of gas cleaning systems
Deactivation of DeNOx catalysts
Reduction of gaseous emissions in combustion of pyrolysis products
Ash
Ash quality and reuse in building materials
Legislative aspects (utilization of fly ash in cement, determining green
General environmental issues
Environmental performance
Understanding of the whole bioenergy chain and environmental aspects
Legislation & authorizations
Existing legislative barriers

Results


Topic
WP-number
2A 2B 2C 2D 2E 2F 2G 2H 3A 3B 3C 3D
NON TECHNICAL ISSUES
Economic issues
Economic aspects (lack of financial incentives, uncertain fuel
Economics
Capability to estimate capital and operating costs of different
Variables and methods of TEA (reliability of the predicted economic
Effect of environmental and social issues on TEA and MCDA
Fuel costs
Legislation / Policy
Legislative aspects (utilization of fly ash in cement, determining green
Policy
Low policymakers' expectations
Unclear political intentions
Market / Funding
Grid access
Risks/guarantees associated with plant development
Gap between laboratory RTD and big scale industrial RTD
Inappropriate/insufficient funding
Lack of established market and new market uncertainty
Knowledge flow between and engagement with stakeholders
Public perception / Education
Public perception of co-firing of biomass/waste
Inadequate knowledge of thermal bioenergy technologies and their
Lack of understanding of technology/benefits, negative perceptions of
Communication capability, needed to improve public perception of
Existing needs in bioenergy education
Availability of educational activities (short courses, Master courses,

Conclusions and suggestions

- Important issues are covered by the work packages
- No overlap, but strong possibilities for synergy

- Several issues already covered in present and previous meetings

- Suggestions made for future workshops

Evaluation is available for WP leaders (excel sheet)