BiomassPLUS

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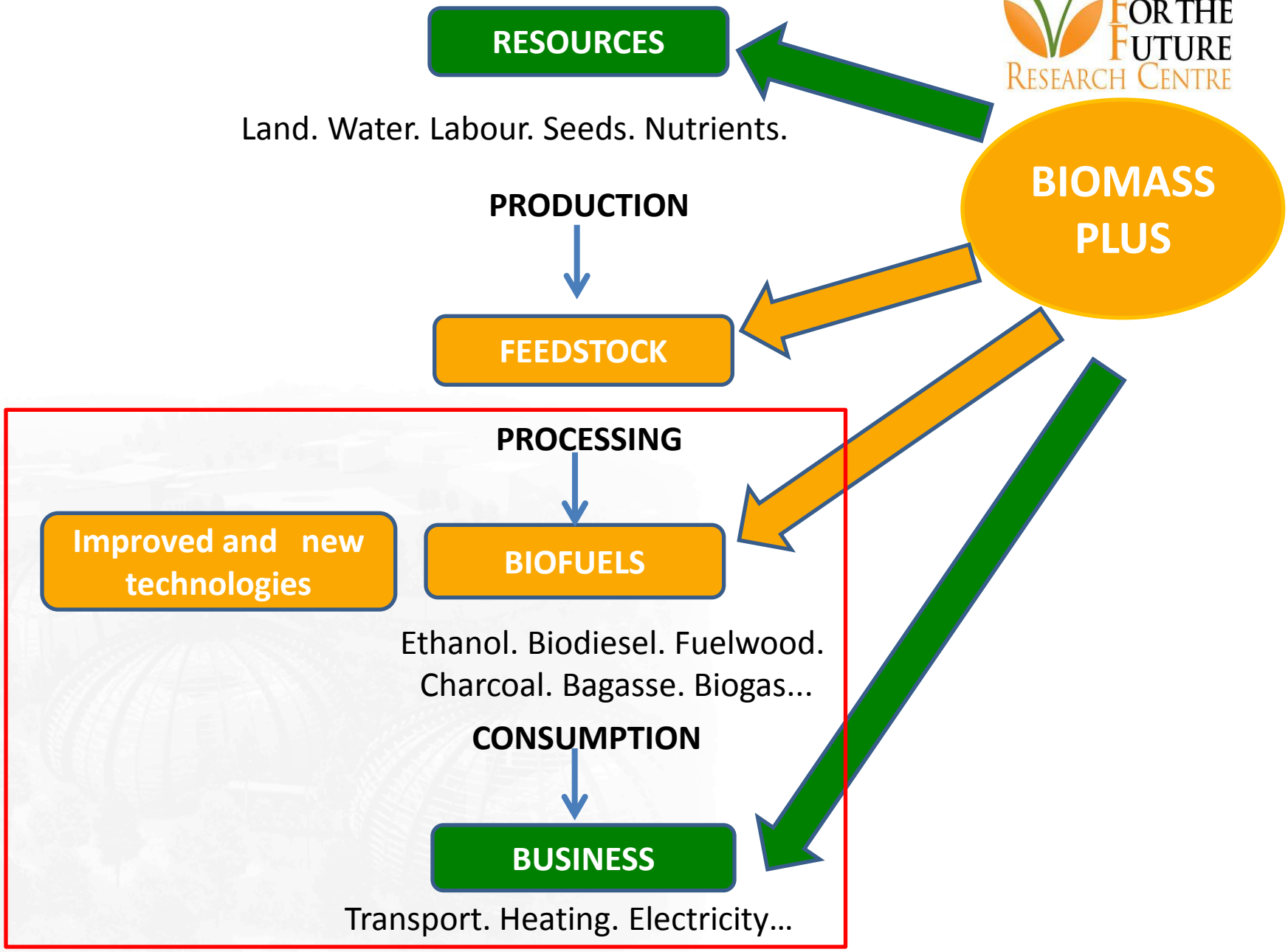
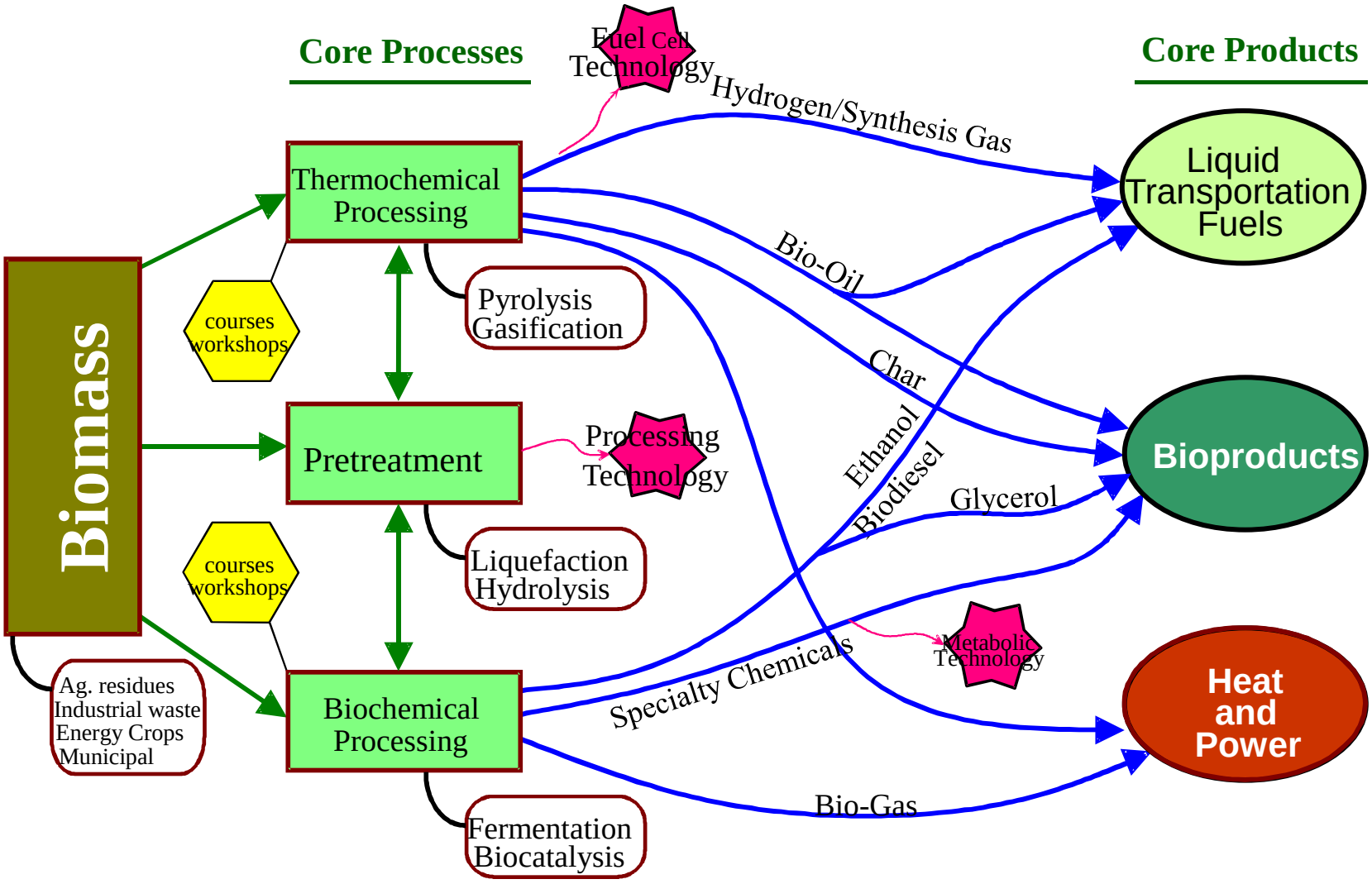
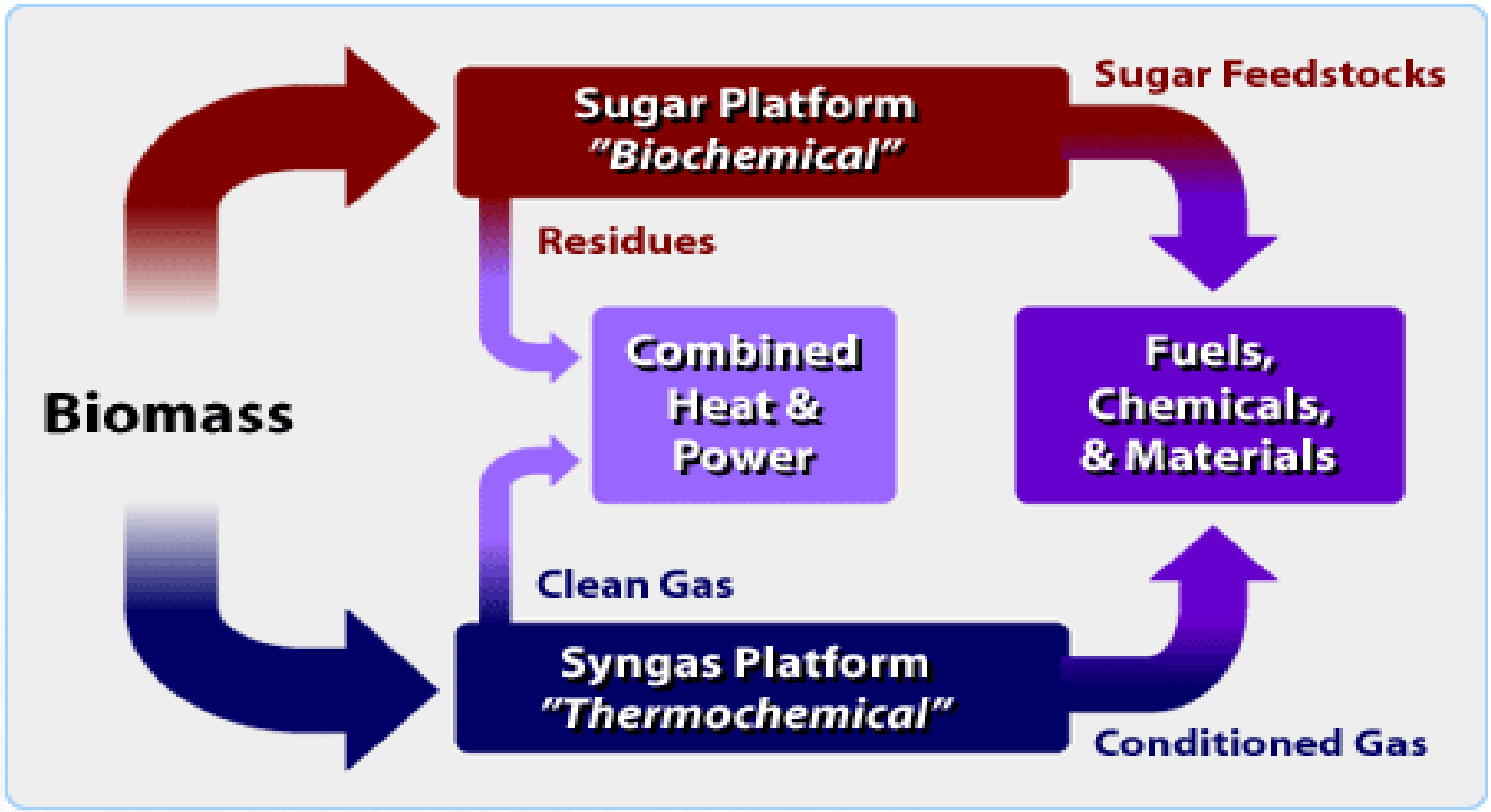
Biofuels – from feedstock to end use





Integrated Biorefinery



Technical Challenges

- **Feedstocks:** Production, Supply Chain
- **Capacity, Efficiency:** Generally lower comparing to conventional refinery
- **Equipment design:** Thermochemical stages
- **Technology:** Large number of possible pathways

Non-technical Challenges

- **Use of land:** Effect of large areas of monoculture
- **Economic:** Investment, cost of production, taxation policies, subsidies

Funded studentships from Round 1

Synthesis and optimization of integrated biorefineries for underutilised biomass. Denny K. S. Ng/Gregory Tucker (UoN)
Objectives:

- **Optimisation** of **allocation** of underutilised biomass
- Design of **biorefineries** to convert the biomass into value-added products
- **Modelling** and optimise the process alternatives

Development of a process to upgrade bio-oil (from biomass) to cooking and heating fuel for Malaysian rural communitie. Feroz Kabir/Suzana Bt Yusuf (UTP)
Objectives:

- Development of a **catalytic thermochemical process** to upgrade bio-oil to liquid fuel (cooking and heating grade).
- Produce biooil from under utilized biomass via **pyrolysis process**
- **Characterization** of biomass from different under-utilized species and the effect of pretreatment on the processibility of biomass to bio-oil and subsequent upgrading.

Funded studentships from Round 1

Integrated Knowledge Systems for Underutilised Biomass Supply Chain. Lam Hon Loong/ Mustafa Kamal (UTM)

Objectives:

- To identify the **availability** of the underutilised Biomass
- To develop a **Supply Chain system** for underutilised biomass

Value added biofuels and biochemicals production from underutilized crops via a biorefining strategy. Chengyu Du (UoN)/Chong Mei Fong

Objectives:

- Develop novel processing strategies (**fungal/bacterial fermentations**) converting underutilized crops into **biofuels** and **green chemicals**
- Transform biomass into a **feedstock** for **bioethanol** and **succinic acid** production
- Providing **alternative solutions** to the utilisation of biomass

Aim of breakout groups

- Identify gaps in BiomassPLUS programme, not covered by existing funded studentships
- Explore potential collaborations between CFFRC/UNMC and universities/research institutes/industry partners.
- Links between ‘agronomy/agroecology’ and ‘technology’ aspects of BiomassPLUS?
- Identify priority areas for development into projects for Round 2
- Identify priority crops for research
- Discuss potential funding for new projects (beyond CFFRCPlus)