

Agricultural Solutions for Energy: Biomass Where to from here?

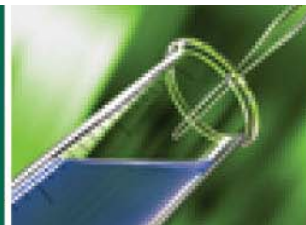
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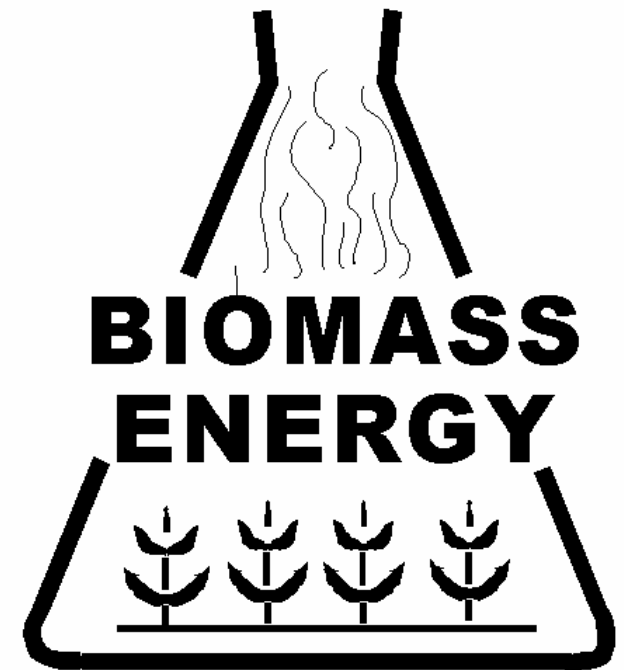
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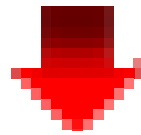
Biomass energy is a technology shift

- From oil and coal to biomass is a major shift
- New way to think about energy and Ontario's natural resources
- Technology shifts reshape markets but they can also reshape society



Past shifts were driven by technology

Technology



New capabilities



New markets

New products

Lower costs



Each has been a bit different

Technology shift	Focus	Roles for policy
Industrial revolution	Cost & productivity	Infrastructure Labour regulation
Green revolution	Productivity & self-sufficiency	Research and extension
Computers, ICT	New ways to work, new markets/products	Research and regulation
Biotechnology	Ag – productivity Pharma – new products	Research and regulation

Biomass energy is different

- Driven by environment not economics
- By need for change rather than opportunity

New approaches to energy
& energy markets

New technologies

New products

New policies

Climate change

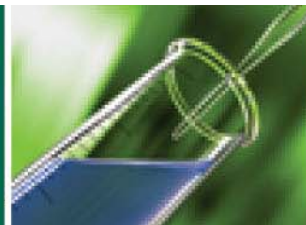
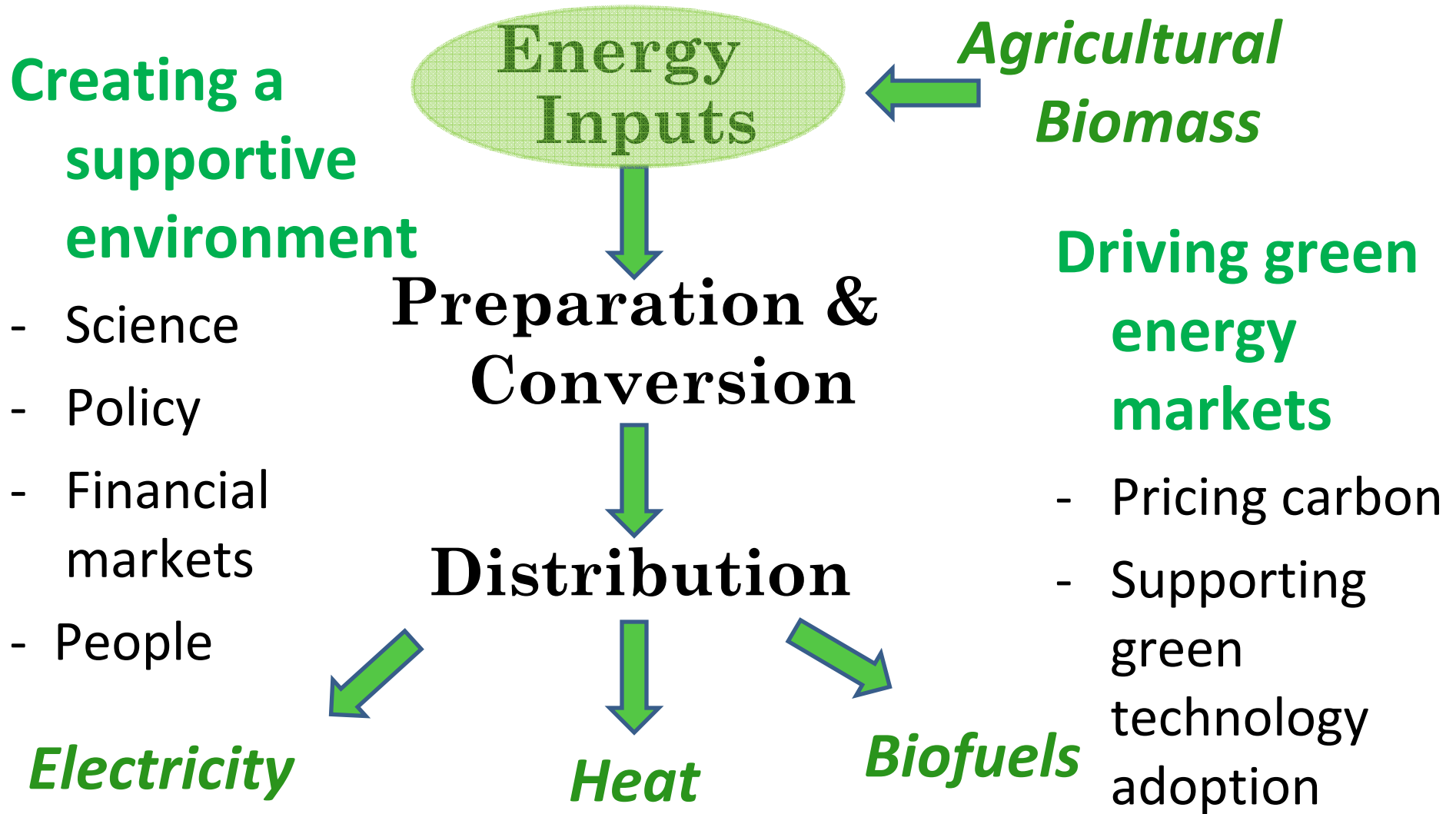


Policy must be the change agent

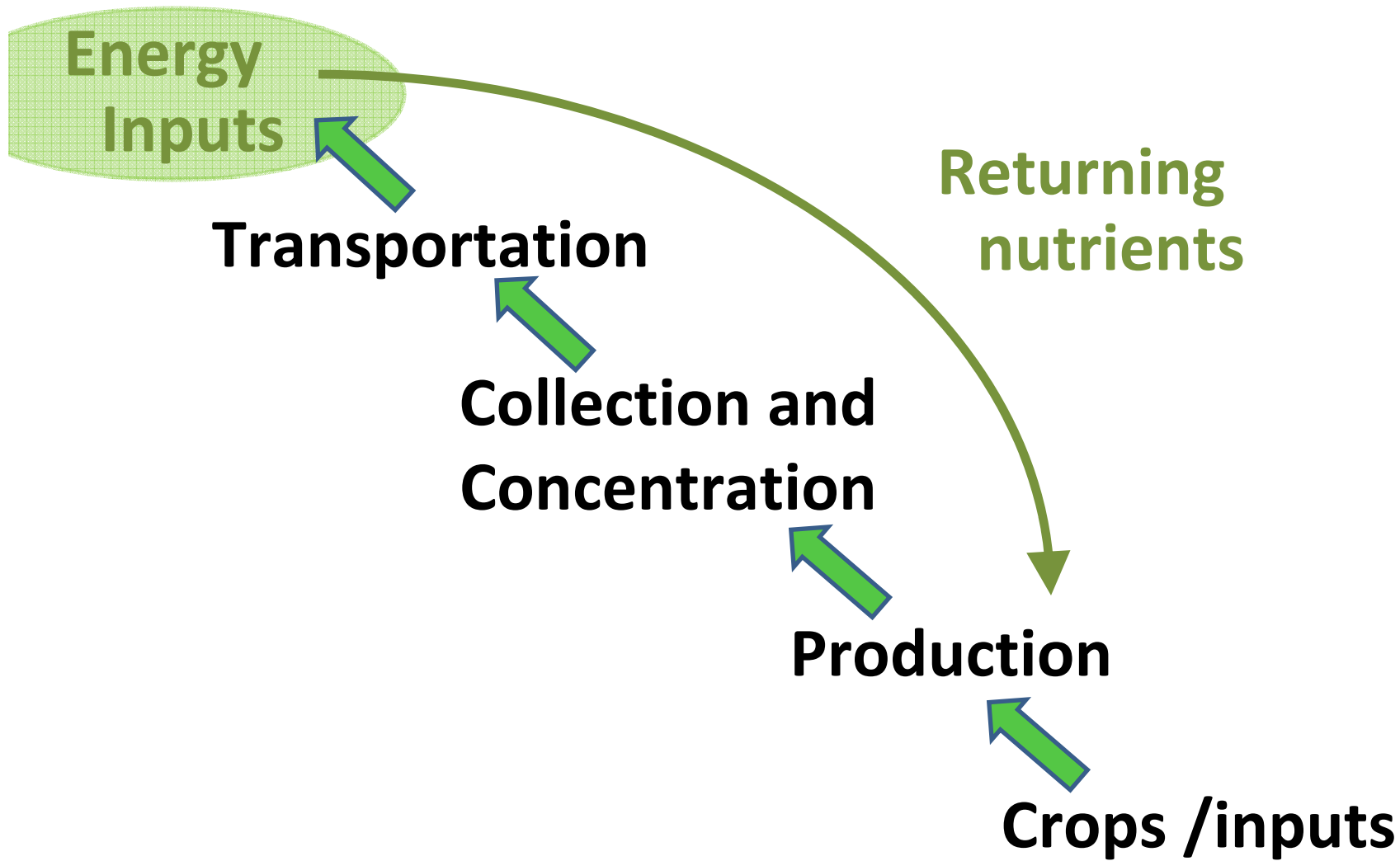
- Players are different – some monopolies, many regulated
- Recognize that benefits are societal rather than individual/firm
- New approach – using policy to change the economics of green energy markets
- Invest in supporting technologies and infrastructure



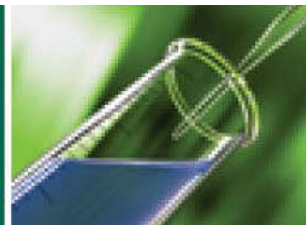
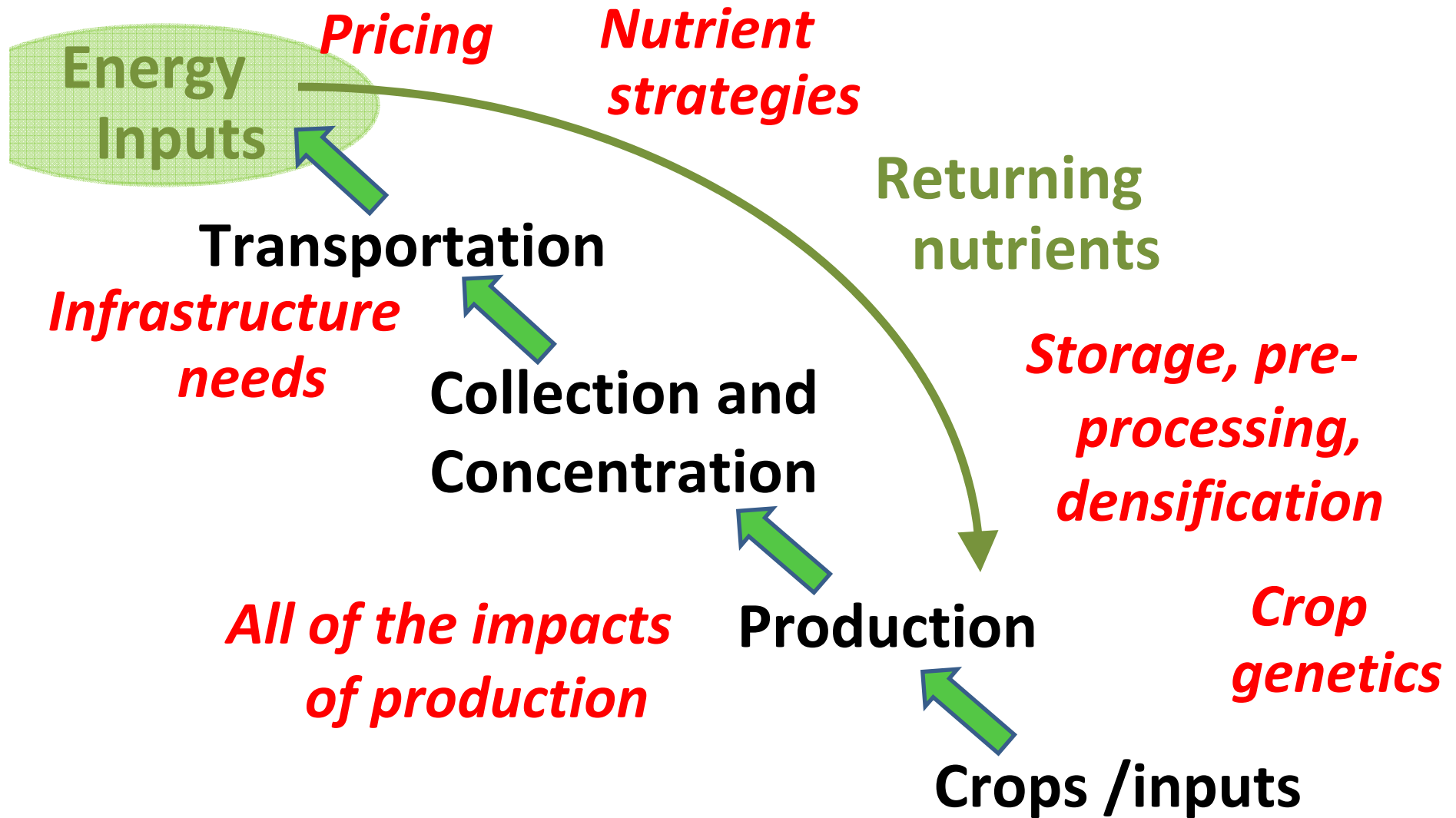
Biomass will be a critical part



Ag as a supplier - What has to be done?

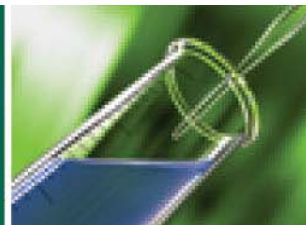


Where should we focus?



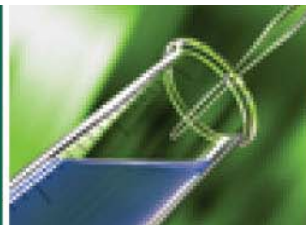
Where's the value for ag?

- Carbon credits
 - Changing production methods
 - Changing crops
 - Sequestration
- Selling/using energy crops
- Reducing costs/replacing inputs
- One part of bio-refinery output
- Pre-processing/processing



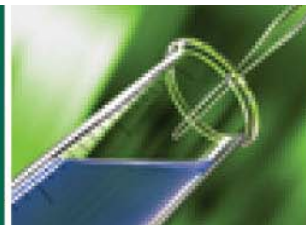
What are the impacts?

- On energy needs
 - On greenhouse gas emissions
 - On Ontario farms
 - On rural communities
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- What are our ultimate objectives?
 - Which investment mix will best achieve those goals?



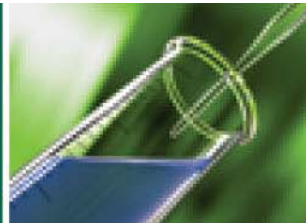
What does ag need to do?

- **Promote the idea** – to farmers and to the public
- **Push for research** to put Ontario at the forefront
- **Develop strategies** for supplying Ontario's energy needs – which parts make sense?
- **Integrate into carbon markets**
- **Partner** with energy producers and users
- Become a **predictable and reliable supplier**
- **Create supply networks** to supply green energy



What needs to change

- Policy needs to help ***create markets and reduce price risk*** for biomass and biomass energy
- Create the ***economic incentives*** to attract farmers and businesses to biomass energy
- Investments in ***processing and infrastructure***
- ***Decentralize energy production*** - local bioenergy production - smaller technologies, closer sourcing, easier access to energy distribution networks
- ***Pick some targets and go after them!***



Questions

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The Chair of Agri-Food Innovation and Regulation is supported
by the Agricultural Adaptation Council

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