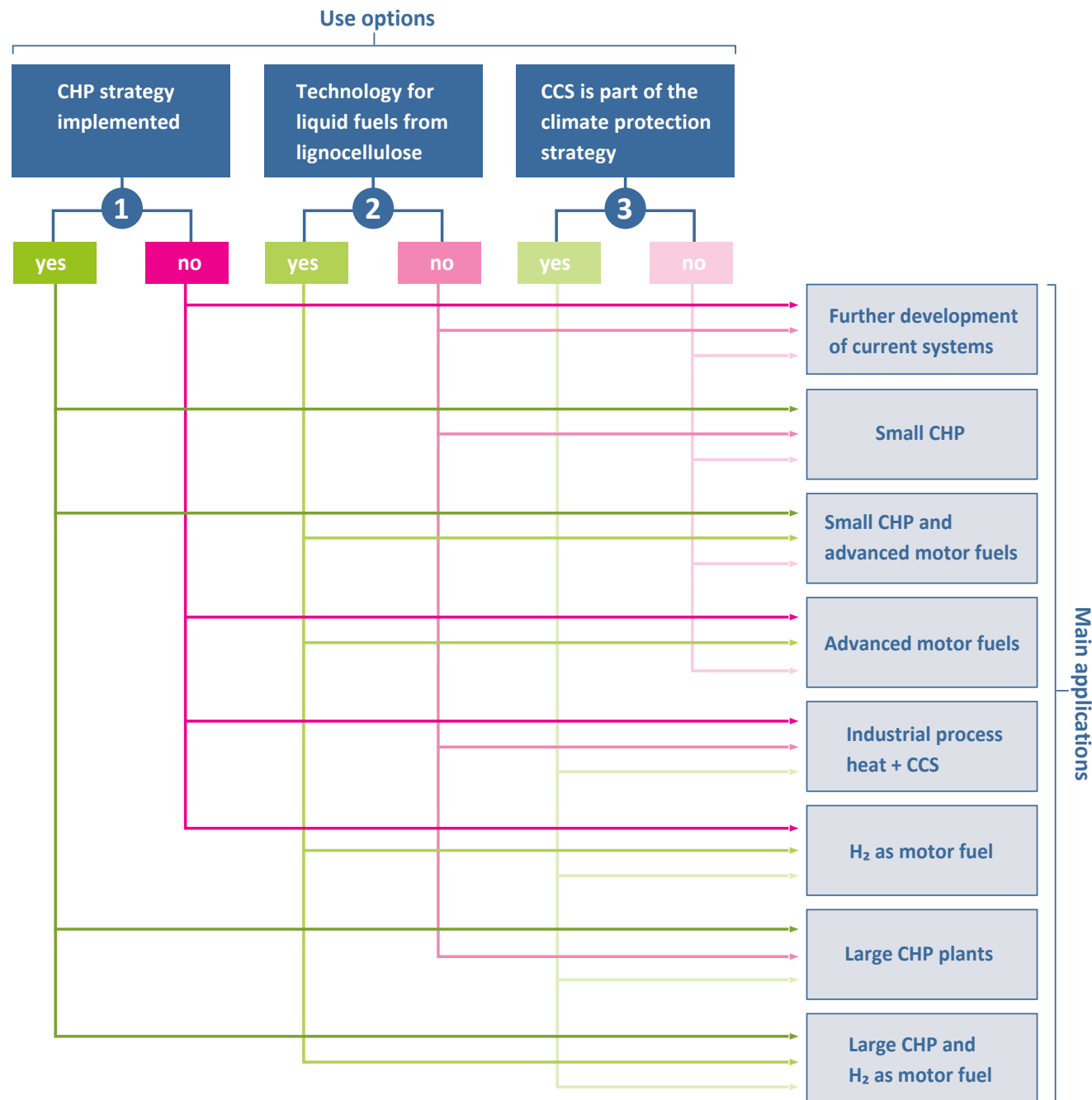


What use can the energy system of the future make of bioenergy?



Bioenergy can perform many different functions in the energy system but potential supplies are limited. How it is used in the future depends on decisions made by society and on technological developments. The infographic shows possible development pathways for the future of bioenergy use.

Use options

The available sustainable biomass potential will in future decisively determine the extent to which bioenergy use is possible. The greatest potential is anticipated to be in lignocellulose biomass, followed by wet, fermentable waste and residues. The technologies will have to adapt to these more difficult and unconventional feedstocks. The way in which biomass is used primarily depends on three developments:

1. Will combined heat and power (CHP) generation be a mainstay of the energy transition?
2. Will liquid biofuels made from lignocellulose (wood, residues and waste materials) be commercially introduced?
3. Will society come to terms with using Carbon Capture and Storage (CCS) as part of the climate protection strategy?

Main applications

The outcome of these developments in use options will determine which bioenergy technologies will in future be put to priority use. On this basis, the various main applications of bioenergy will be:

- Small CHP plants
- Small CHP plants and advanced motor fuels
- Advanced motor fuels
- Industrial process heat + CCS
- H₂ as motor fuel
- Large CHP plants
- Large CHP plants and H₂ as motor fuel

If the listed use options are not pursued, today's systems for local electricity and heat generation will have to be further developed to make more efficient use of energy from biomass.