

Activity 2: Development Scenarios and Energy Options

On your table you will find:

- Five development scenario card; and
- Worksheet with 10 Energy Options.

What are the top 2 most eligible technologies for each development if the target was to achieve 10% of energy load from low carbon technologies?

Please tick the technologies that are most appropriate?

Please mark up the A3 worksheet in front of you

15 minutes then feedback

Note: The advantages and disadvantages listed here are those that relate to the exercise within the module. They should not be taken as a definitive list of characteristics for each technology as this would be dependent on many factors that are not explored in detail within the exercise.

Please tick the two most eligible technologies that are appropriate for each of five Development Scenarios on the cards on your table.

Technology	Biomass	Nat. Gas CHP	Biomass CHP	Ground source HP	Air source HP	Small wind	Medium wind	District Heating	Solar Thermal	Photovoltaics
Description	Burning wood products to generate heat	Producing electricity using gas as a fuel and capturing the heat	Producing electricity using biomass as a fuel and capturing the heat	Using thermal energy from the ground to provide useful heat	Using thermal energy from the air to provide useful heat	Small wind turbines generating electricity e.g. 1m blade diameter	Medium wind turbines generating electricity e.g. 3-5m blade diameter, 9-14m hub height	A single heat source serving a number of buildings	Using solar energy to create hot water	Using solar energy to generate electricity
Advantages	Can result in very significant carbon savings	Can closely mimic technology that people are very used to.	Possibly best technology in terms of pure carbon reductions	Very self-contained heating systems – only requires electric connection	Smaller space requirements than ground source	Relatively cheap and easy to install	Can be very effective on the right site	Allow increased efficiencies through larger equipment Can use a variety of fuel sources	An unobtrusive way to link into more traditional heat generation systems	Fit-and-forget
Disadvantages	Require more interaction than traditional systems Fuel must be manually transported and stored before use	There needs to be a requirement for a reasonable level of heat to allow electricity to be produced. As CHP produced both electricity and heat.	Only suitable for very large application	Can require significant ground area Relies on appropriate ground conditions	Not as efficient as ground source over a year	Unlikely to ever produce a significant amount of electricity	Needs careful consideration of noise and flicker issues	Needs to be of a significant size before becoming commercially viable	Requires careful sizing as heat generated when it's not needed	Expensive
Development Scenarios										
Development Scenario 1										
Development Scenario 2										
Development Scenario 3										
Development Scenario 4										
Development Scenario 5										