

Is there a limit to technological progress?

Task 1. Watch video.

<https://youtu.be/zVsHzS70krg>

Task 2. Choose the correct answer.

1. Which of the following statements is true:

- Kardashev's classification measures progress by the ability to control large scales, while Barrow's measures the ability to control small scales
- Kardashev's classification measures progress in terms of energy consumption, while Barrow's measures progress by the ability to control small scales

2. What is limiting technological progress?

- Our capacity to extract available energy
- Our capacity to build small-scale technologies
- A and B
- None of the above

3. In comparison to the energy that Earth receives from the Sun, our total energy consumption represents about:

- 10%
- 1 %
- 0,1 %
- 0,001 %

4. In comparison to the total energy radiated by the Sun, what Earth receives from the Sun represents about:

- 0.00004 %
- 0.004 %
- 0.00000004 %
- 0.0000000000000004 %

5. What could be a sign of stellar engineering from advanced extraterrestrials?

- Stellar engineering is obviously impossible
- We are alone in the universe, so the question is irrelevant
- A Dyson sphere, i.e. solar panels put in orbit around a star
- A star out of which energy is actively drained

Task 3. Answer the questions.

- ✓ What other ways than energy and control of small scale technologies could be used to measure technological progress universally?
- ✓ What are the pros and cons of both a Dyson sphere and active energy extraction from a star?
- ✓ How would you test whether stars out of which energy is actively drained would or would not be Type II (stellar) extraterrestrial civilizations?