Nuclear power is in its infancy

In an abandoned squash court under the stands of the University of Chicago's football stadium, on 2nd December 1942 humanity gave birth to nuclear fission.

The young human parents of this powerful child were right in the middle of a war. Impressed by his strength, they packed him straight off to do his military service, and nuclear power became a child soldier at the age of two and a half.

You are what you eat

Humans are from the homo-sapiens species. For 200,000 years they have been used to gathering food from nature, then dumping the waste from their digestive systems back in nature.

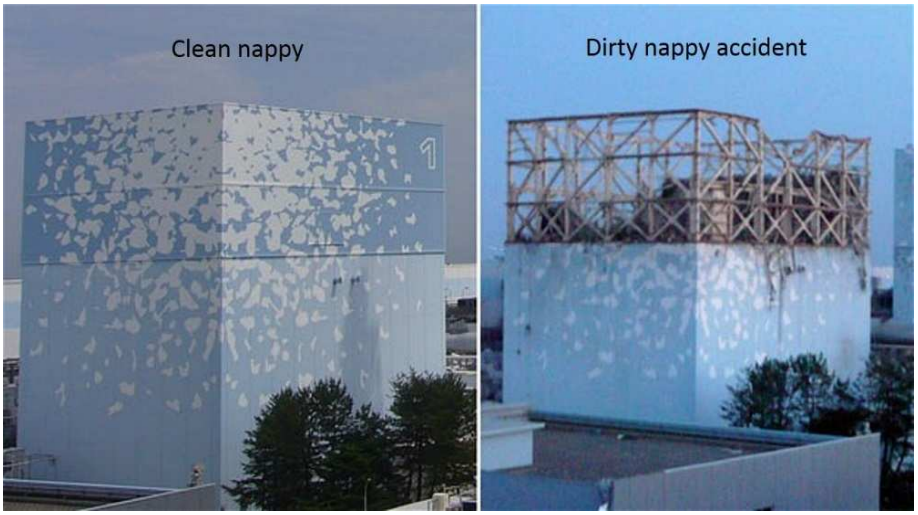
Noticing that their new child had a healthy appetite for a rare fissile isotope of uranium, and at the request of the military, the happy parents put him straight onto solid food. Right from the start, nuclear energy was on a diet of solid uranium oxide pellets, prepared using a special recipe. But the humans were unpleasantly surprised to discover that what came out of the child's digestive system was particularly toxic.

After his discharge from military duties in 1945, the parents of this young energy wanted him to make a positive contribution to society. So they sent him off to the prestigious School of Energy, to join all the other energies in learning how to contribute to human prosperity and the protection of the environment.

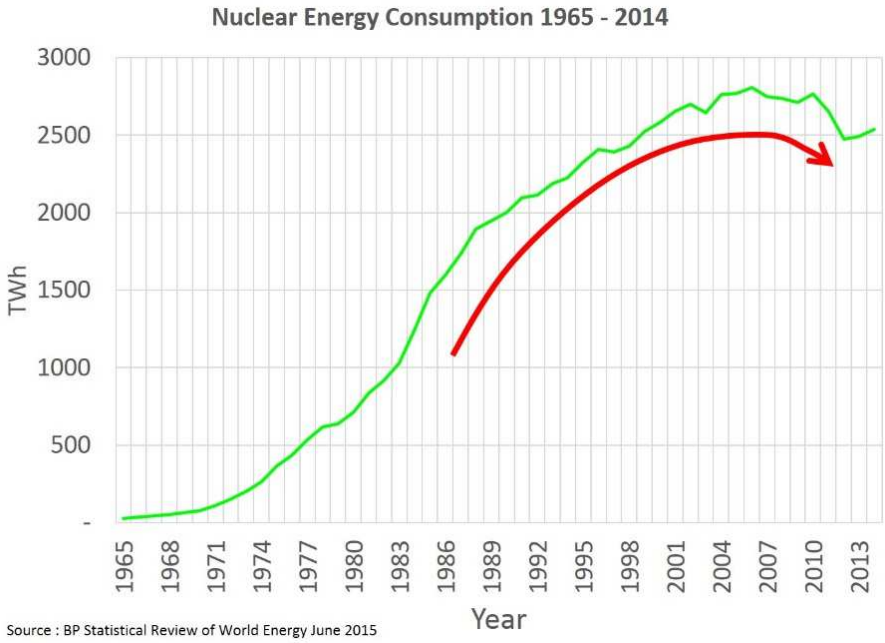
Nuclear power at the School of Energy

When they recognised the child's enormous potential, the teachers welcomed him with open arms. In particular, he quickly became the teacher's pet in physics classes, where he was introduced to dozens of different ways for him to grow and reach his potential. To the point where some of the other kids like gas and coal became jealous and started a long campaign of bullying, in the school playground which is the global market for energy. It would seem that bullying is allowed at the School of Energy: Neither teachers nor parents intervened to stop it.

But following a course in engineering where he learned the importance of design simplicity and the use of accumulated knowledge, a main career path was chosen for the youngster - the Pressurised Water Reactor. So he continued to consume his diet of solid food, and at the age of 73 he still wears nappies to contain the toxic waste and prevent it spreading into the environment where it would be dangerous for humans.



On the rare occasions when there were nappy accidents at school, the other energies took the opportunity to bully and humiliate the young student even more – until even his parents began to have doubts in him. With his confidence in tatters his grades, which had been so promising at first, began to slide.



Even if this child produces 32% of our clean energy, he seems a bit fragile. Maybe we should take away his pocket money and give it to renewable energy, or his little brother nuclear fusion?

Tuition fees at the school of energy are exorbitant, and he's struggling. Should we take him out of school? (after 73 years, the technology must be mature, right?)

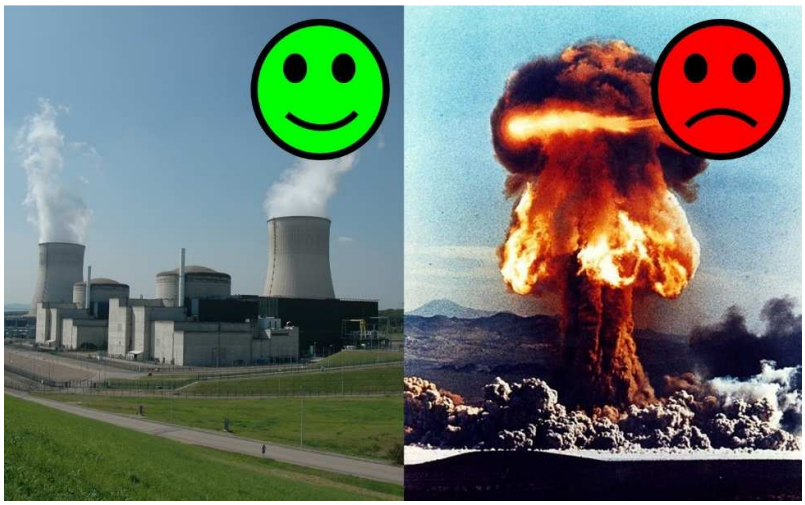
Some people think he's the child of the devil and that we should abandon or even kill him!

No.

The problem is not nuclear power - it's us, his parents.

When one of our human children has learning difficulties, do we punish or support him? When he needs career advice, do we abandon him or steer him towards a rewarding job? When he has an accident or an illness, do we criticise or help to heal him? Do we complain about how much he costs or admire his potential?

A child is the most precious thing in the world and when it comes to our nuclear offspring we are guilty of gross negligence. OK, so his date of birth wasn't ideal - his short military career has inevitably left a few psychological scars - but he's learned his lesson:



Nuclear power: Good. Nuclear weapons: Bad

Nuclear fission is anything but a mature technology. Humans began to mine coal 500 years ago and its use is still growing today. The Pressurised Water Reactor is a fairly mature technology which is far from the end of its life, but there are dozens of other ways to produce energy using nuclear fission – so far we have explored only one path.

Nuclear power is in its infancy - its potential to bring energy and prosperity to humans remains enormous. We gave it life, now we must support it and help it grow.

What do you think? Is the glass half empty or half full?	
Nuclear power uses only 0.5% of extracted uranium	The potential for progress is 99.5%
Nuclear power is expensive	Recent advances, notably with molten salt reactors and small modular reactors, can reduce costs
Nuclear power is dangerous	It is impossible to produce energy with zero risk. Nuclear power has the smallest risk per unit of energy produced.
The waste is toxic for thousands of years	There is potential to reduce the toxicity to 300 years, for a very small amount of waste. Geological storage for 300 years is a manageable problem.

The first thing to change is his food. A liquid diet based on a soup of molten salts can help him to digest better, which will give us less problems with his waste. Diversifying with thorium could be an interesting option too. Then we must support and expand his education, protect him from bullying, and encourage him to study chemistry, architecture, production engineering and economics. These changes will mark the beginning of a second nuclear era.

To accelerate our energy transition, it’s not nuclear energy that’s the problem - it's us.

Image credits : 1, 2, 3 (thanks to M. Shellenberger for the idea), 4, 5.