Aufpolierte Propaganda einer ablaufenden Industrie

Wie sich die Atomindustrie am Klimawandel vergreift

Dr. Eva Stegen

NEC 2021

29. April 2021

Atom-Spin auf dem Klimakrisen-Trittbrett

EWS Schönau eG

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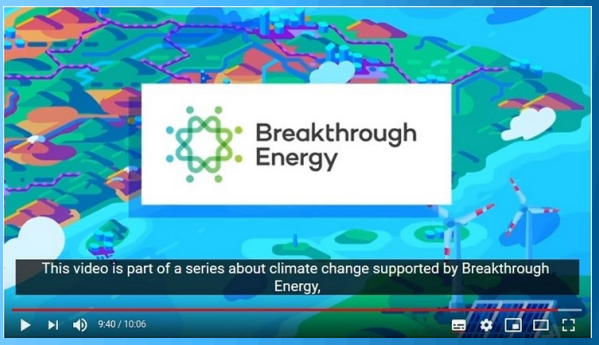
kurzgesagt
in a nutshell

ARD

ZDF



Atom-Spin auf dem Klimakrisen-Trittbrett

Neue Atomreaktoren – hilfreiche Netzwerke

Förderung durch B&M Gates Foundation „Global Development“

Spiegel
Guardian
El País
Le Monde
BBC
CNN
…

Mit absurd hohem CO_2-Fußabdruck

der Welt erklären, was zu tun ist

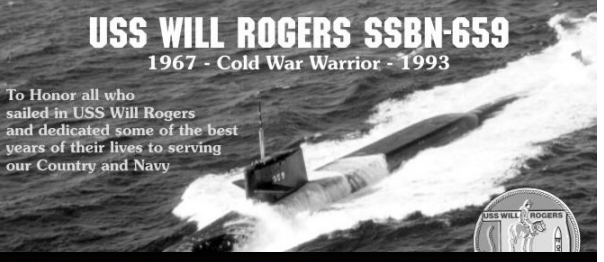
EWS ElektrizitätsWerke Schönau

Der Blinde Fleck im Atom-Klima

Der CEO von Terrapower macht‘s sichtbar

Der Blinde Fleck im Atom-Klima

Alte Navy-Veteranen als neue Klimaretter



TerraPower
A Nuclear Innovation Company

ABOUT US OUR WORK OUR PEOPLE NEWS

Chris Levesque is president and chief executive officer of TerraPower, and also serves as a member of the TerraPower Board. He was appointed to that position in November 2018 after having served as president of TerraPower since 2015. Levesque leads this nuclear innovation company in the pursuit of next-generation nuclear energy solutions and also oversees TerraPower's new venture into therapeutic medical isotopes. His proven track record in scoping, planning and implementing complex projects began with his service in the U.S. Nuclear Navy and features more than 30 years of experience in the nuclear field.

Prior to joining TerraPower, Levesque led major new reactor build efforts at both Westinghouse and AREVA, overseeing projects in both the U.S. and Finland. Before his assignment in Finland, he led the formation of AREVA's joint venture with Newport News Shipbuilding, AREVA Newport News, for which he served as chairman of the Board and president.

Levesque has extensive experience with the nuclear industrial base and nuclear component manufacturing. Earlier in his career, Levesque served as the manager of engineering and manufacturing at Westinghouse's Newington, New Hampshire, component manufacturing facility, and he has served in multiple management positions at two nuclear-capable shipyards. Levesque began his career as a nuclear submarine officer and served on both the USS Boise (SSN 764) and the USS Will Rogers (SSBN 659). On Boise, he supervised initial criticality and reactor startup testing, and qualified as chief engineer.

Levesque holds a Bachelor of Science in mechanical engineering from Rensselaer Polytechnic Institute, a Master of Science in mechanical engineering and a Naval Engineer degree from the Massachusetts Institute of Technology. He also serves on the Board of the Nuclear Energy Institute.

CHRIS LEVESQUE

President and CEO

Veterans in Energy

NEI

EWS ElektrizitätsWerke Schönau

Laufzeitverlängerung:

Brückentechnologie

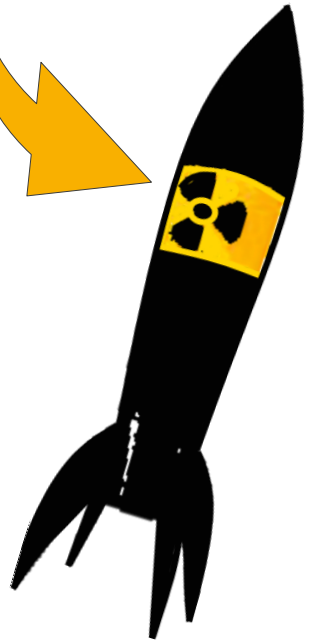
oder

Platzhalter?

Damit die neue Reaktor-Generation folgen kann, müssen wir die alte Reaktor-Flotte am Laufen halten.

“Die Frage der Überschneidung zwischen Zivilem und Militärischen kann in zwei Bereiche unterteilt werden:

Waffen und Atom-U-Boot-Antrieb.“



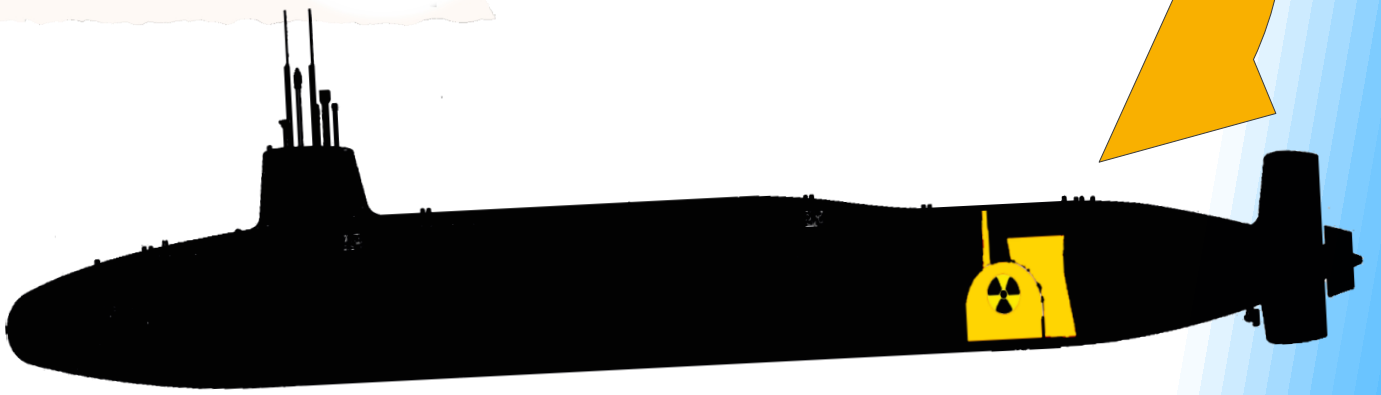
3.4 *The overlap between nuclear engineers in the power sector and the military*

(1) The question of overlap between civil and military can be divided into two sections, weapons and nuclear submarine propulsion. There is significant scope for interchange in the latter as the power plant of a nuclear submarine is in general, similar to that of a modern power station. Many former nuclear submariners already occupy positions at all levels in the civil nuclear power and contracting industry and this is likely to continue.

(2) Thus the Royal Navy can be seen as a training ground for supporting the future UK nuclear power sector. By the counter argument, MOD are subject to the same issues of demographics as the rest of the industry and they are part of the pool calling for an adequate supply of engineering skills and providing training for them. There is also an overlap between the nuclear weapons sector and civil in certain specialised engineering fields, decommissioning and waste management area. The nuclear skills agenda for the UK therefore needs special attention to satisfy all parties.

(3) With respect to nuclear engineering education and training, the MOD is fully engaged through the appropriate sector skills council (COGENT), the national Skills Academy Nuclear (NSAN) and higher up the skills pyramid, the Nuclear Technology Education Consortium (NTEC), as well as through its own dedicated education and training programmes at HMS SULTAN.

(4) The UK continues to project manage, develop, design, supply and operate PWR technology for the nuclear submarine programme and this involves RN, MOD Civil Service and contractor resource, the latter led by BAE Systems and Rolls-Royce and supported by their supply chains. This programme includes new



Gemeinsame Stellungnahme v. Institution of Engineers (INucE) und British Nuclear Energy Society (BNES),
https://publications.parliament.uk/pa/cm200809/cmselect/cmdius/50/50w1e13.htm

Was spricht bei U-Booten für Atom-Antriebsreaktoren?

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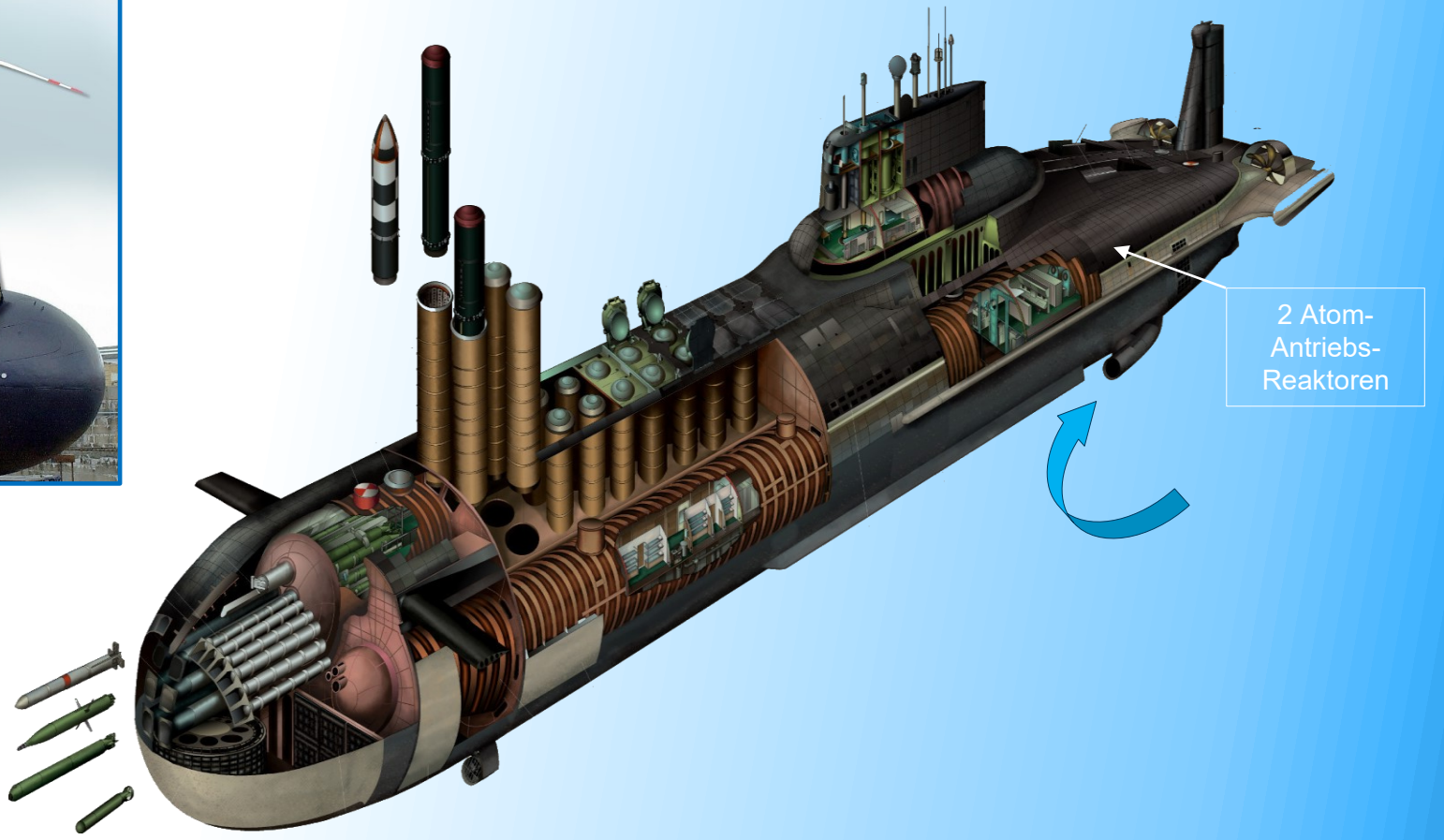
Dr Eva Stegen

Warum die Erneuerbaren zum Erhalt der Zweitschlag-Fähigkeit nicht taugen



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Ausbildungs-Infrastruktur

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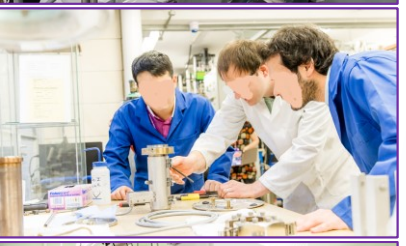
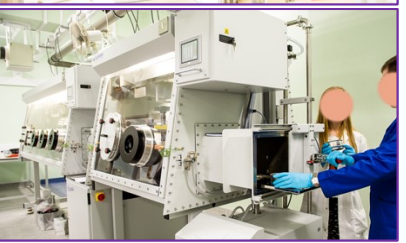
The University of Manchester
Dalton Nuclear Institute

Dalton Nuclear Institute





7. *The overlap between nuclear engineers in the power sector and the military*

7.1 There are a significant number of overlaps in the capabilities listed above between the civil and military sectors. Common aspects include areas such as:

Civil Nuclear Programme	*Military Nuclear Programme*
Reactor technology for electricity generation	Reactor technology for naval propulsion
Fuel recycle technology	Separation technology for plutonium and uranium
Legacy waste management and decommissioning	Legacy waste management and decommissioning
Enrichment technology for civil fuel	Enrichment technology for weapons

7.2 The applications of the technology are different and it doesn't necessarily mean that having a civil nuclear capability means one, by default, has military capability. However there are common capabilities such as:

- Nuclear Materials performance.
- Nuclear Physics and Nuclear Data.
- Thermal hydraulics.
- Control and Instrumentation systems.
- Computational Fluid Dynamics.
- Nuclear Chemical Engineering.
- Safety Assessment.
- Robotics.
- etc.

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7.3 In the past, the military programme has been developed very much in isolation from the civil programme. This was due to concerns over classified information. However there is an opportunity for civil

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Ausbildungs-Infrastruktur

In der Vergangenheit wurde das militärische Programm weitgehend isoliert vom zivilen Programm entwickelt. Aus Rücksicht auf Geheim-Informationen. …

7.3 In the past, the military programme has been developed very much in isolation from the civil programme. This was due to concerns over classified information. However there is an opportunity for civil and military programmes to work together in developing a skills pool and supporting research, with only the truly classified aspects of the military programme kept separate. The UK is not now in the position of having financial or personnel resources to develop both programmes in isolation. For example, reactor physicists on the military programme can develop their skills and knowledge by researching civil systems, and then only when necessary divert to classified work to follow a specialist career path. This link does however need to be carefully managed to avoid the perception that civil and military nuclear programmes are one and the same.

7.4 As noted earlier, a vibrant academic sector and the strong identity of a National Nuclear Laboratory will provide the mechanisms to ensure a coordinated and coherent approach to underpinning nuclear engineering skill base from basic science to applied technology.

March 2008 *Submission from the Dalton Nuclear Institute*

Das Vereinigte Königreich ist derzeit nicht in der Lage, es hat weder die finanziellen noch die personellen Ressourcen, um beide Programme isoliert zu entwickeln. …

Diese Verbindung muss allerdings mit Vorsicht behandelt werden, um die Wahrnehmung zu vermeiden, dass das zivile und das militärische Atomprogramm ein und dasselbe sind.“

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„Ich erinnere mich, die Atomingenieure waren die Aussätzigen am College.“

Alex Walsh, Leiter des zivilen Atomprogramms, BAE Systems

Q105 Chairman: Is it the same for BAE Systems? Would you echo that?
Mr Walsh: It is not necessarily the new build which has made the industry unattractive. I went to university in 1979. That was just after Three Mile Island had happened. I decided to do a nuclear engineering degree because I considered it to be the “green” thing to do at the time. After Three Mile Island there was a big swing in public opinion.

Q106 Chairman: Slightly, yes.
Mr Walsh: I remember the nuclear engineers were the pariahs of the college. The number of youngsters who wanted to go into nuclear engineering fell off. The nuclear engineering degrees shut down before the end of the new build with Sizewell B. There was a real public swing which said that this was not an industry that you would want to get into if you were a youngster, so I do not blame the stopping of new build for the youngsters not coming in. I think we have to show that it is an attractive industry. It is a

Nukleartechniker

Sie sind jung, haben ein abgeschlossenes Ingenieursstudium und Freude an nuklearen Massenvernichtungswaffen?

Wir sind eine Europäische Atommacht und möchten das auch bleiben. Eigentlich finden wir es einfacher, Nachwuchs mit friedlichen Botschaften zu rekrutieren als mit militärischen. Heute möchten wir aber einmal offen kommunizieren, dass die gemeinsame Nutzung der nuklearen Infrastruktur den britischen Verteidigungshaushalt entlastet. Für Ihr neues Ausbildungszentrum am Standort Hinkley Point haben wir uns mithilfe einer ausgebufften Subventionsstrategie Steuergelder gesichert, die über die direkte Zuweisung der Steuermittel in den Militärhaushalt nicht darstellbar gewesen wären.“

Verteidigungshaushalt entlasten

A UK SMR programme would increase the security, size and scope of opportunities for the UK supply chain significantly, enabling long-term sustainable investment in people, technology and capability

Advantages to MoD programme

Advantages to the UK's nuclear deterrent programme

One particular application for deployment of the talent developed through the UK SMR programme would be in the ongoing maintenance of the UK's independent nuclear deterrent. Currently, the UK Government is required to invest funding to sustain the skills and capability necessary for the maintenance of the Royal Navy's nuclear submarine programme. Recent decisions in Parliament have committed the UK to continue with independent deterrence for another generation, and therefore the need to maintain the relevant skills and capability remains paramount.

The indigenous UK supply chain that supports defence nuclear programmes requires significant ongoing support to retain talent and develop and maintain capability between major programmes. Opportunities for the supply chain to invest in new capability are restricted by the limited size and scope of the defence nuclear programme. A UK SMR programme would increase the security, size and scope of opportunities for the UK supply chain significantly, enabling long-term sustainable investment in people, technology and capability.

Expanding the talent pool from which defence nuclear programmes can draw from would bring a double benefit. First, additional talent means more competition for senior technical and managerial positions, driving excellence and performance. Second, the expansion of a nuclear-capable skilled workforce through a civil nuclear UK SMR programme would relieve the Ministry of Defence of the burden of developing and retaining skills and capability. This would free up valuable resources for other investments.

A similar story can also be told around creating talent in major

Kompetenzpool

„Die Erweiterung einer kerntechnisch qualifizierten Arbeitnehmerschaft durch ein ziviles SMR-Atom-Programm würde das Verteidigungsministerium von der Last befreien, die Entwicklung und Erhaltung von Fähigkeiten und Kompetenzen zu schultern. Dies würde wertvolle Ressourcen für andere Investitionen freisetzen.“

Rolls Royce, 2017 UK SMR - A National Endeavour

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Die zivile Atomkraft ist der Infrastruktur-Garant für die die militärische Atomkraft

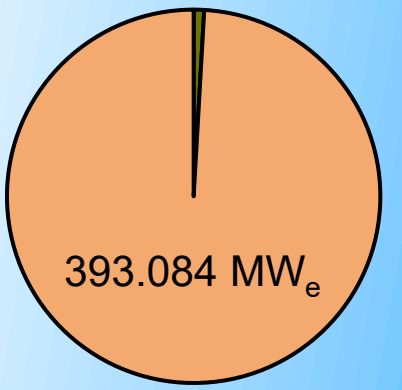
Ökonomische Skalierungseffekte, (Kompetenzpool, Zulieferindustrie, (Taktung in Auftragsbüchern)

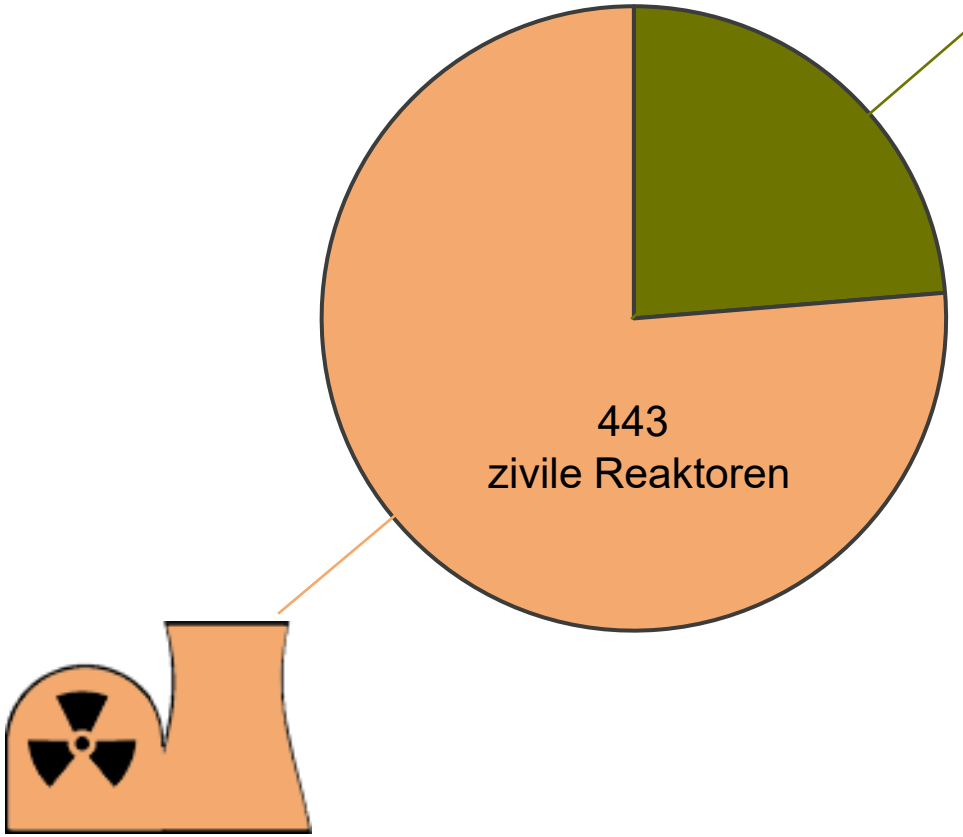
180 militärische Reaktoren

nukleare Antriebsreaktoren auf 140 Schiffen (meist U-Boote)

< 1.800 Mw_e

Antriebsreaktoren <100MW





Atomenergie-Nutzung weltweit, Quellen: world nuclear association, IAEO

Geringe Stückzahl.
Große Abstände zwischen den Bestellungen.
Was bedeutet das für die Zuliefer-Industrie?

Neue Jagd-Unterseeboote unterstreichen Frankreichs Weltmacht-Ambition

Den Stapellauf der «Suffren» lässt sich Präsident Macron nicht entgehen.

Die neuen U-Boote sind besonders geräuscharm und damit schwer zu orten.

NZZ 12.07.2019

Klimafreundliche Kriegsführung?

Warmingstripes beim Stapellauf eines Atom-U-Bootes?

EWS Schönau eG
Dr. Eva Stegen

Warum das Militär die zivile Atomkraft braucht

Der frühere Energie-Minister, ein Energie-Analyst, die größte Bank Europas, ein multinationaler Energiekonzern, eine Rating-Agentur, die Arbeitnehmer-Aktionäre des Atom-Konzerns, ein Mitglied des Wirtschaftsausschusses im Oberhaus und der konservative Hauptstadt-Bürgermeister üben Kritik am teuersten Kraftwerk der Welt.

- Quersubventionierung
- Lieferketten
- Spezial-Material
- Forschung/Entwicklung
- Ausbildungs-Infrastruktur
- Industrielle Basis

#atoms4war