

John Warden CEng CPhys FInstP FNucl

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SUMMARY

I offer considered and evidence-based strategic leadership, programme development and technical nuclear and engineering direction. I am currently active in developing the strategic, programme and investment envelope for SMR and Advanced Reactor deployment in a number of countries.

I have over twenty years experience of Chair, Board and Executive roles in the nuclear, defence and non-profit sectors: I find an emphasis on encouraging constructive challenge, intelligent delegation and collaboration across skill sets gives best results. My background in senior management, engineering and skills also ensures an approach focused on people, culture and technical assurance.

I am a qualified reactor physicist and nuclear engineer, a Fellow of the Nuclear Institute and Fellow of the Institute of Physics, also a Chartered Engineer and Chartered Physicist. I hold Masters degrees in Physics, Astrophysics, Business and Defence Studies, and a Postgraduate Diploma in Nuclear Reactor Technology.

PROFESSIONAL EXPERIENCE

CHIEF EXECUTIVE OFFICER - GREENSABRE CONSULTING LTD *2023 – Present*

Founded (with colleagues) a global consultancy advising asset owners and investors on applications of nuclear energy to Net Zero goals and novel energy supply. Particular focus on business case development and financing of SMRs and Advanced Reactor deployment in UK, US, Canada and Middle East. Based in London, UK with presence in US.

<https://greensabreconsulting.com>

AFFILIATE - NUCLEAR ECONOMICS CONSULTING GROUP *2022 – Present*

Nuclear Economics Consulting Group (NECG) helps clients with economic and business issues facing nuclear power and decommissioning projects. I specialise in project structure and financing, advanced technologies and nuclear projects in the defence sector. NECG is based in Washington, DC.

<https://nuclear-economics.com>

SENIOR CONSULTANT – PROSPECT LAW *2024 – Present*

Consultant for a London-based specialist energy law practice, advising clients navigate the complexities of nuclear reactor projects, including their structure, financing, and implementation.

<https://prospectlaw.co.uk>

CAPABILITY DIRECTOR - ATOMIC ACQUISITIONS LTD

2021 – 2023

Working with a group of experts in the UK and elsewhere, advising investors in nuclear opportunities and technologies and matching appropriate investment to emerging programmes. During this role I worked closely with investors, SMR vendors, EPC and other prime contractors to develop multi-\$bn deployment programmes for UK and European deployment, advising on policy, regulatory, technical and construction issues.

<https://atomicacquisitions.com>

CHAIR - ASTON MARTIN HERITAGE TRUST

Trustee 2018-Present; Chair 2022 - present

Chairman of the Board of a global automotive & educational charity. I took over the Board at a time of upheaval and failing organisational culture; I implemented a series of changes to bring in a more collaborative culture and delegated working practices at Board and staff level, including greater diversity, which have led to growth and much improved morale, quality and activity. Currently engaged with UK and European commercial partners in setting up a project to develop a £15m new museum on a brownfield site, supported by National Lottery funding.

<https://amht.org.uk>

ASSOCIATE, GATENBY SANDERSON

2019-2021

Advising a UK recruitment firm on Board-level selection for nuclear, government and public sector roles.

<https://www.gatenbysanderson.com>

NON-EXECUTIVE DIRECTOR, ENERGY DIVISION, STHREE plc

2016-2018

Advising a listed London-based global STEM recruitment firm on skills development and regulatory compliance in the nuclear and wider energy sectors. Developed the offer to the NDA estate and overseas markets.

<https://www.sthree.com/en-gb/>

ROUTE PANEL MEMBER - INSTITUTE FOR APPRENTICES & TECHNICAL EDUCATION (IfATE)

2017 - Present

Member of the Engineering & Manufacturing Route Panel – The IfATE implements and assures technical education in England and is part of the UK Government's Dept for Education. I provide specialist nuclear engineering and skills advice to IfATE and its stakeholders. I have been closely involved in scrutiny and approval of the nuclear, engineering and project management apprenticeships used by the UK nuclear, engineering and manufacturing sectors.

<https://www.instituteforapprenticeships.org>

CHIEF EXECUTIVE - NUCLEAR INSTITUTE

2015-2016

Leading the UK's professional body for the nuclear sector. Working with government, industry, the regulator and stakeholders in the UK and global nuclear sector to enable knowledge transfer, sector growth and public engagement. During my tenure grew membership by 20%, stabilised the budget and developed a number of innovations for new membership and professional pathways.

<https://www.nuclearinst.com>

MEMBER - NUCLEAR ENERGY SKILLS ALLIANCE - DEPT FOR ENERGY & CLIMATE CHANGE

2013-2016

Member of a UK government advisory body for nuclear sector skills modelling & development, working with nuclear sector and skills stakeholders. Developed the UK nuclear skills supply & demand models which are now used by UK DESNZ.

NUCLEAR SECTOR MANAGER - ENGINEERING CONSTRUCTION INDUSTRY TRAINING BOARD (ECITB)

2013-2015

Providing the policy & skills link between the nuclear & engineering construction sectors. Lobbying and engagement with industry & UK government around skills development and increasing collaboration between the nuclear and engineering construction sectors. Led often delicate statutory levy negotiations with NDA Parent Bodies and across the nuclear supply chain.
<https://www.ecitb.org.uk>

CONSULTANT LECTURER - GEN2, ENERGUS, CUMBRIA

2012-2014

Delivered peripatetic specialist nuclear education and training to a variety of audiences from nuclear graduates to Sellafield, Magnox and BAeSystems apprentices. Subjects covered – nuclear sector strategic overview, new build, decommissioning, reactor physics, reactor design, radiological protection, submarine construction & operations.

REACTOR OPERATIONS CONSULTANT - UK ENERGY COAST, CUMBRIA

2012-2013

Leading a joint project between Tecnatom and UK's Energy Coast consortium to develop a £12m training centre and curriculum for UK reactor operators based on Westinghouse AP1000.

INTERNATIONAL ATOMIC ENERGY AGENCY

1994 -1998

UK representative on the IAEA's International Arctic Seas Assessment Project, carrying out original research and policy advice into Soviet-era submarine nuclear power plant corrosion and environmental impact. I was involved with a team from US, UK, Russia, Finland, Norway and Austria to evaluate the reactor core source terms, potential reactor and hull corrosion and decay pathways, environmental impact, salvage and remediation solutions. I also led a study into the potential of re-criticality of the cores, in particular intermediate-spectrum lead-bismuth cooled cores.

https://inis.iaea.org/collection/NCLCollectionStore/_Public/30/004/30004582.pdf?r=1

(see also selected publications below)

ROYAL NAVY

1985-2012

Senior Officer with multiple leadership roles in policy, submarine nuclear engineering, intelligence, operations and training. My last role was as RN Director of Education, responsible for education policy and delivery for 35,000 naval personnel. Other key roles included:

Operations:

Ministry of Defence roles in projects, policy, intelligence and national events.

Work with US submarine & intelligence communities.

Submarine operations & intelligence.

Submarine communications officer.

Engineering:

Qualified submarine PWR supervisor & operator.

Supervisor & Engineer for the RN's JASON 10kW shore training reactor.

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Senior Lecturer at the Royal Navy's Department of Nuclear Science & Technology, instructing to Masters level in PWR reactor physics, engineering & operations.

HR and training:

Head of Training at the Defence Intelligence & Security Centre Chicksands, a role equivalent to Principal of a small Further Education College.

President of the RN's Officer selection centre, chairing some 300 selection panels and directing the implementation of competency-based assessment.

Led the implementation of the Systems Approach to Training across the RN and parts of defence training – and subsequently used this experience to embed SAT in nuclear organisations.

Second in command of the RN's Submarine School.

Led development of virtual reality onboard and shore-based training for RN submarine induction and qualification, working with US Navy and industry.

OTHER ROLES

INSTITUTE OF DIRECTORS

2018 – 2023

Member of the IOD Accreditation & Standards Committee – Advising the IOD Main Board on conduct and quality of professional training and qualifications relating to UK and global corporate governance standards. Leveraged my Board experience to develop the Director's competency framework.

<https://www.iod.com>

JOHN WARDEN PHOTOGRAPHY

2017 - Present

Owner of a professional photography practice operating in UK and US.

Chair of the UK photographic industry's Trailblazer Group 2022-23, advising on national training standards. I also set up the photography apprenticeship course in England and I coach photography apprentices (Level 3 and 4).

<https://www.johnwardenphotography.com>

<https://horsepowerfineart.com>

ST VINCENT COLLEGE GOSPORT

2009-2012

Governor of FE/6th Form College with £6m budget. **Chair** of three committees: Audit, Strategy and Curriculum. Began as Parent Governor and co-opted for a second term. I led a review of a proposed merger with a neighbouring college, concluding that it should not happen, despite the Council's wishes. The merger did not happen.

DEFENCE AGENCY – DEFENCE INTELLIGENCE & SECURITY CENTRE

2002-2003

Member of the Defence Agency Board for DISC Chicksands. The Agency managed five sites with a budget of £30m and around 1500 personnel. I led a two-year transformation project to integrate and streamline the governance across multiple sites and across a range of Armed Forces cultures, and integrate a new site into the organisation.

EDUCATION

UNIVERSITY OF OXFORD 1982-1985
MA Physics (*full-time undergraduate degree*)

QUEEN MARY COLLEGE LONDON 1990-1992
MSc Astrophysics (*Distinction*) (*part-time whilst in MOD and on submarine patrol*)

RN NUCLEAR DEPARTMENT (UNIVERSITY OF SURREY) 1993
Postgraduate Diploma in Nuclear Reactor Technology (*Distinction*)
(*full-time during RN Nuclear Reactor Course*)

OPEN UNIVERSITY 1997-2001
MBA (*part-time whilst in RN roles*)

KINGS COLLEGE LONDON 2001-2002
MA Defence Studies (*full-time whilst at Joint Services Command & Staff College*)

OTHER QUALIFICATIONS

Chartered Engineer
Chartered Physicist
Fellow of the Nuclear Institute
Fellow of the Institute of Physics
Associate of the Master Photographers Association

SELECTED PUBLICATIONS

Navigating Net Zero: Success factors for nuclear energy fission and fusion technologies
The Future of Nuclear: How Will Fission and Fusion Technologies Help Us Reach Net Zero Emissions? – vgbe Energy Journal Aug 2024
<https://nuclear-economics.com/wp-content/uploads/2024/10/2024-08-Navigating-Net-Zero-vgbe-energy-journal.pdf>

The Future of Nuclear: How will fission and fusion technologies help us reach Net Zero emissions?
– atw/International Journal of Nuclear Power, Nov 2023
<https://nuclear-economics.com/wp-content/uploads/2023/11/2023-11-01-atw-Future-of-Nuclear-Part-3.pdf>

Fusion in 10 years – is this the real thing or ‘here we go again?’ – atw/International Journal of Nuclear Power, Sep 2023
<https://nuclear-economics.com/wp-content/uploads/2023/09/atw-article-09-2023.pdf>

Challenges for SMR adoption - atw/International Journal of Nuclear Power, Jul 2023
<https://nuclear-economics.com/wp-content/uploads/2023/07/2023-06-atw-4-23-Challenges-for-SMR-Adoption.pdf>

Developing project management skills for nuclear construction; A review of next steps to be taken to develop project management skills to support the UK's planned nuclear new build programme. Nuclear Future, Nuclear Institute May 2014

Computer assisted learning for reactor physics education and training of nuclear plant designers, operators and maintainers, PHYSOR, Seoul, S Korea, Dec 2002.

Radiological Conditions of the Western Kara Sea, IAEA - Radiological Reports Assessment Series, 1999; <http://www-pub.iaea.org/books/IAEABooks/4742/Radiological-Conditions-ofthe-Western-Kara-Sea>

Possible Criticality of Marine Reactors dumped in the Kara Sea, 3rd Int. Conf. on Environmental radioactivity, Tromso, Norway, June 1997; <http://www.osti.gov/bridge/servlets/purl/610741-HYTx8N/webviewable/610741.pdf>

Potential radionuclide release rates from marine reactors dumped in the Kara Sea, Sci. Total Environ. 202 (1997) 225–236.