



# CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING

## *ADVANCES IN NUCLEAR POWER TECHNOLOGY STUDY* Abbreviations, Acronyms, Facts & Figures

### **ACRONYMS:**

<b>CASE:</b>	Connecticut Academy of Science and Engineering
<b>CCGT:</b>	Combined Cycle Gas Turbine
<b>CEAB:</b>	Connecticut Energy Advisory Board
<b>CERC:</b>	Connecticut Economic Resource Center
<b>DECD:</b>	Department of Economic & Community Development

<b>EIA:</b>	Energy Information Administration
<b>IRP:</b>	Integrated Resource Plan
<b>ISO:</b>	Independent System Operator
<b>kWh:</b>	kilowatt-hour
<b>LCOE:</b>	Levelized Cost of Electricity
<b>NRC:</b>	Nuclear Regulatory Commission

### **FACTS AND FIGURES**

<b>Types of Reactors</b>
– Light Water Reactors (operating) Generation II
o Boiling Water Reactors
o Pressurized Water Reactors
– Generation III and III+ Reactors (being built)
o Active Safety Systems
o Passive Safety Systems
– Small Modular Reactors (under development)
– Generation IV Reactors (potentially ready >2030)
<b>State of Nuclear Power</b>
– 443 nuclear reactors operating worldwide in 29 countries ( <i>~16% of electricity generated</i> ) <i>Note: stats are prior to Fukushima accident</i>
– 104 nuclear reactors operating in U.S. in 31 states (19.6% of electricity generated)
– 64 new nuclear reactors under construction in 15 countries
– 5 new nuclear reactors under construction in U.S.
– Watts Bar 2 (TVA)
– Vogtle 3&4 (Southern Nuclear)
– V.C. Summer 2&3 (SCANA)
– U.S. lifetime extensions (20 years)
– 66 approved by US NRC
– 16 filed for approval
– 20 more expected to file
<b>Sources of Emission Free Electricity in the U.S.</b>
– 68.9 % Nuclear
– 21.6 % Hydro
– 9.5 % Solar, Wind & Geothermal 9.5

*(See other side for additional information)*

**ECONOMIC IMPACT OF ADDING A NUCLEAR AND CCGT PLANT AT MILLSTONE OR CONNECTICUT YANKEE  
(FROM ATTACHMENT 1: THE ECONOMIC IMPACT OF NUCLEAR POWER GENERATION IN CONNECTICUT –  
TABLE 10, PAGE 162)**

Economic Variable	Annual Average Change from Baseline (2009-2050)			
	Add Nuclear Plant at Millstone or CT Yankee		Add CCGT Plant at Millstone or CT Yankee	
<b>Total New Employment (Persons)</b>	2,420		1,333	
<b>New Construction (Jobs)</b>	957		254	
	<b>Ann. Avg. Change</b>	<b>NPV</b>	<b>Ann. Avg. Change</b>	<b>NPV</b>
<b>New Gross Domestic Product (mil nominal \$)</b>	\$516.6	\$7,594.8	\$471.1	\$5,768.4
<b>New Output (mil nominal \$)</b>	\$845	\$12,576.3	\$773.6	\$9,581.7
<b>New Personal Income (mil nominal \$)</b>	\$363.6	\$6,154.1	\$247.6	\$3,291.8
<b>Net New State Revenue (mil nominal \$)</b>	\$27.4	\$586	\$18.6	\$306.2