Comparing the Candidates' Technology and Innovation Policies

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If the United States is to maintain its position as the world's leader in science, technology, and innovation, the next Administration will have to make developing effective policies in these areas a top priority.

Technological innovation drives long-term national economic growth.[1] In fact, innovation has been responsible for about 80 percent of the growth in the American economy since World War II, meaning that establishing effective technology and innovation policies is crucial to U.S. economic competitiveness. It is therefore encouraging that both John McCain's and Barack Obama's campaigns increasingly recognize the central role that science, technology, and innovation play in economic growth and are developing specific policy positions on these issues.

This renewed focus on innovation and technology-led economic growth is refreshing in an environment where the dominant economic policy models have long counseled either tax cuts on individuals, budget surpluses, or social spending. To be sure, both McCain's and Obama's core economic policies remain rooted in conservative neo-classical supply-side and liberal neo-classical (and Keynesian) theories, respectively, but their campaign platforms incorporate substantially more focus on innovation and technology policies than their predecessors' platforms did in the 2004 election.

The Information Technology and Innovation Foundation (ITIF) releases this report with the goal of focusing the spotlight on the candidates' technology and innovation policies. In terms of broad goals, such as "Ensuring broadband access for all Americans" or "Strengthening math and science education" there exists a degree of overlap in the candidate's positions. But there are critically important differences in the policy approaches the candidates would implement to achieve these objectives. Moreover, each candidate could benefit in several cases from applying more detail to specific policy proposals and moving beyond general proclamations such as "strengthening math and science education" to offering concrete policies and explicit agendas that make the President accountable for fulfilling stated objectives during his term.

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The report begins with an overview of each candidate's general philosophy on technology and innovation policy, and then compares the candidates' specific policy positions across eleven issue areas:

- Tax Policy
- Innovation and R&D Policy
- E-Government Policy
- Spurring Digital Transformation Outside the Government
- Broadband and Telecommunications Policy
- Digital Privacy and Security Policy
- Skilled Workforce Policy
- Education Policy
- Patent Reform and Intellectual Property Protection
- Trade Policy
- Energy and Environmental Policy

ITIF is a non-partisan research and educational institution – a think tank – focused on innovation, productivity, and digital economy issues, and does not endorse either candidate. This report seeks to provide a factual, impartial comparison of the candidate's technology and innovation policies. Note also that the candidates' positions articulated in this comparison come from current, publicly-released issue platforms as part of their Presidential candidacies, and does not include legislation or positions introduced or supported during their Congressional service. Unless otherwise indicated, the source for the candidates' positions comes directly from the technology and innovation issue areas on their websites.[2]

GENERAL PHILOSOPHY TOWARDS TECHNOLOGY AND INNOVATION POLICY

The overall orientation of John McCain's innovation policy agenda is to focus on proposals for creating a favorable environment for private sector innovation through a clear and less burdensome tax code, limited government regulation, and a strong trade, immigration, and competitiveness agenda. McCain places more emphasis on spurring research and development (R&D) through the tax code than on spurring R&D through public expenditures. In other words, McCain's policy seeks to foster an environment for private sector investment in R&D and innovation.

Barack Obama's approach to technology and innovation policy engages the government as an active partner alongside industry in setting a national technology and innovation agenda. More than McCain, Obama would substantially increase government funding for science and technology R&D, including doubling the current level of federal R&D funding for basic research and targeting additional funding towards specific initiatives, such as $150B for clean energy programs and $50B for health information technology. Whereas a McCain Administration would seek to leverage existing federal agencies tasked with innovation activity, such as the Manufacturing Extension Program (MEP) within the Department of Commerce, and resist creating new bureaucracies, an Obama Administration would be more willing to reevaluate the current federal innovation infrastructure and reorganize it as necessary, such as through the creation of a new Advanced Manufacturing Fund.

McCain, believing that innovation is fueled primarily by risk capital, skilled workers, incentives for entrepreneurs, a light regulatory framework, and open access to markets, would place most emphasis for innovation on the marketplace, and be less focused than Obama on having government take a very active role in proactively establishing and aggressively funding a national innovation and R&D agenda. Obama's policies recognize the private sector as the central source of economic growth and prosperity and appreciate the need to create a favorable regulatory, tax, and investment climate for it, but also affirm that government can play a proactive and constructive role in helping the private sector commercialize its innovations.

GENERAL PHILOSOPHY TOWARDS TECHNOLOGY AND INNOVATION POLICY

JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
■ Promote innovation largely through tax incentives that create risk capital which encourages private investment.	■ Engage government as an active partner with private industry in setting a technology and innovation agenda.
■ Support corporate R&D through expanded R&D tax credits; don't commit substantially-increased federal funds to R&D.	■ Significantly increase federal funding for scientific research and development activities, while making the R&D tax credit permanent.
■ Leverage and empower existing science and techonolgy (S&T) programs, agencies, and structures; minimize creation of new federal bureaucracies or institutions.	■ Expand activities of federal agencies in support of innovation and create new organizational structures if necessary.
■ Allow the marketplace to drive innovation and only have the government intervene in the most extreme instances of market failure.	■ Intervene in shaping policies and regulations in the event of market failures (such as nationwide access to broadband Internet), though the private sector remains the primary source of innovation.
■ Include broader issues like immigration, free trade, and capital gains as part of his innovation agenda.	■ Connect all citizens with each other and with the government to engage them fully in solving commonly-shared challenges. Aggressively deploy technology to open up the federal government and provide increased transparency to citizens.
■ Congress should not get involved in writing rules for the Internet.	■ Congress should get involved in writing rules for the Internet.
■ Does not stress technology and innovation as an overarching theme in his campaign.	■ Stresses technology and innovation as an overarching theme in his campaign.

TAX POLICY

Governments can spur innovation by creating a favorable climate for private sector investment that leverages tax policy to incent desired corporate behavior. As an increasing number of countries use research and development (R&D) tax incentives as a key component of their innovation-led national economic development strategies, the United States has fallen from providing the most generous R&D tax incentives amongst OECD countries in the late 1980s to 17th in 2004, ITIF finds in *Expanding the R&D Tax Credit to Drive Innovation, Competitiveness and Prosperity.*[3] The United States has the second-highest combined federal-state corporate tax rate among industrialized countries at 39.3 percent.[4]

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
2001/2003 Tax Cuts	▪ Make permanent all provisions other than the estate tax repeal.	▪ Permanently extend certain provisions of the 2001/2003 tax cuts, primarily for taxpayers earning under $250,000; repeal cuts in the top two marginal tax brackets.
Corporate Tax Rates	▪ Lower the corporate tax rate from 35 to 25 percent.	▪ Maintain corporate tax rate at 35 percent. End corporate foreign tax deferral. Support the Patriot Employment Act, which would encourage corporations to create jobs inside the United States.
R&D Tax Credit	▪ Make the R&D tax credit permanent, and extend it beyond the current level by calculating a company's R&D tax credit as an amount equal to 10 percent of the wages that the company spends on R&D in the United States.	▪ Make the R&D tax credit permanent (at the current level.)
First Year Expensing of Equipment and Technology Investments	▪ Allow first-year 'expensing' of equipment and technology investments for companies (investments are currently depreciated over several years for tax purposes.)	▪ Maintain existing depreciation schedule.
Capital Gains	▪ Maintain capital gains taxes at current levels (15 percent.)	▪ Increase capital gains and dividend tax rates to somewhere between 20 to 28 percent. Eliminate capital gains on start-ups and small businesses. Close the "carried interest" provision, which allows venture capitalists to recognize investment profit as capital gains.[5]
Internet Taxes	▪ Make the Internet tax moratorium permanent. Oppose taxes applied to Internet service access fees.[6]	▪ Make the Internet tax moratorium permanent.

INNOVATION AND R&D POLICY

Countries increasingly recognize the importance of coordinated national innovation and R&D policies in driving economic growth and spurring the competitiveness of their corporations. A recent ITIF report by Fred Bloch and Matthew Keller, *Where Do Innovations Come From? Transformations in the U.S. National Innovation System, 1970-2006,* documented the crucial importance of federal R&D funding to innovation in the United States, noting that in 2006 only eleven of the eighty-eight entities that produced award-winning innovations were not beneficiaries of federal funding.[7] Increasing federal R&D funding should be an imperative of the next Administration.

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
Federal R&D Funding	▪ Maintain existing levels of federal R&D funding.	▪ Double current level of federal funding for basic research over the next ten years, focusing on physical (materials) and life sciences.[8] (Federal R&D funding for basic research in 2007 was approximately $28B.)[9] Fund additional initiatives including: ▪ $150B over ten years for clean energy programs; $10B for a Clean Technologies Deployment Venture Capital Fund.
Manufacturing Extension Program (MEP)	▪ Expand the Manufacturing Extension Program.	▪ Double funding for the Manufacturing Extension Program.
America COMPETES Act	▪ Fully fund and implement the America COMPETES Act.	▪ Fully fund and implement the America COMPETES Act.
Public-Private Partnerships	▪ Support innovation through Cooperative Research and Development Agreements (CRADAs) where industry and government enter into public/private partnerships, share costs, and accelerate the application of technology in government.	▪ Create a national network of public-private business incubators. Invest $250M per year to increase the number and size of such incubators.
Cluster (Regional Economy) Initiatives		▪ Fund $200M in annual grants to develop regional clusters of high-technology-focused areas.[10]
Other Federal Incentives	▪ Offer a $300M prize to the developer of "a battery package that has the size, capacity, cost, and power to leapfrog commercially-available plug-in hybrids or electric cars."	▪ Create an Advanced Manufacturing Fund to identify and invest in the most compelling advanced manufacturing strategies. The award process for the fund will be based on Michigan's 21st Century Jobs Fund.
Technology and Innovation Policy Advisors	▪ Bring talented men and women of science into the federal government. Place a priority on S&T experience; nominate appointees with adequate experience and understanding of science, technology, and innovation.	▪ Include individuals with technology backgrounds in economic-policy making organizations and councils.
DARPA		▪ Direct DARPA (Defense Advanced Research Projects Agency) to increase support for long-term breakthrough research in areas such as nanotechnology, IT, and advanced manufacturing.

E-GOVERNMENT POLICY

The United States has not adequately taken advantage of the power of information technology to simplify and streamline interactions between citizens and their government. In *'Turbo Government': A Bold New Vision for E-government,* ITIF describes how moving to a "turbo-government" model has the potential to dramatically boost the uptake of digital government services, cut costs for both government and users, and make the experience of dealing with government less frustrating.[11]

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
E-Government Leadership	■ Create an Office of Electronic Government to set a strategic vision for the implementation of electronic government.	■ Install a national Chief Technology Officer (CTO) and task the CTO with leading an interagency effort to ensure that federal agencies are both using best-in-class technologies and sharing best practices.
Open Government	■ Use the Internet as a vehicle for increasing transparency in every aspect of government performance and government purchasing. ■ Have government serve Americans better through the use of technology, including videoconferencing and collaborative networks.	■ Have the CTO focus on government transparency, especially in ensuring that each arm of the federal government makes records open and accessible by creating a single government website to track grants, contracts, earmarks, and lobbyist contracts. ■ Establish pilot programs to open up government decision-making and involve the public in the work of agencies by tapping into their collective expertise to help government make more-informed decisions, including: ■ Requiring appointees leading Executive Branch departments and rule-making agencies to conduct a significant amount of agency business in public (e.g. online). Require Cabinet officials to conduct periodic national online town hall meetings. ■ Give the American public an opportunity to review and comment on the White House website for five days before the President signs any non-emergency legislation.

SPURRING DIGITAL TRANSFORMATION OUTSIDE THE GOVERNMENT

Information technology (IT) is a general purpose technology and a core driver of innovations that increase personal and organizational productivity and drive economic growth, as ITIF's report *Digital Prosperity: Understanding the Economic Benefits of the Information Technology Revolution* explains.[12] A forthcoming major ITIF report, *Digital Quality of Life*, will comprehensively review how IT improves the quality of life for both individuals and society in almost all facets of life, including health care, education, transportation, public safety, and beyond. The next President must support the digital transformation of the economy beyond the federal government.

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
Health IT	■ Favors promoting the rapid deployment of 21st century information systems and technology that allows doctors to practice across state lines. ■ Does not favor penalties for doctors who do not install electronic health records.[13]	■ Use technology to lower the cost of healthcare. Invest $50B ($10B a year over the next five years) to move the U.S. healthcare system to broad adoption of standards-based electronic health information systems, including electronic health records.
Nationwide Public Safety Network	■ Create a nationwide wireless public safety network supporting local, state, and federal first responders (by the end of his first term).	■ Task the Chief Technology Officer with overseeing development of a national, interoperable wireless network for local, state, and federal first responders.
Transportation Infrastructure		■ Deploy new information technologies for safe and efficient dispatch of rail and highway vehicles.

BROADBAND AND TELECOMMUNICATIONS POLICY

Widespread, broadband access to the Internet for American citizens and businesses drives both U.S. economic competitiveness and a higher standard of living. As ITIF finds in *Explaining International Broadband Leadership*, the United States has fallen to 15th amongst OECD countries on a combined measure of broadband Internet access, speed, and price.[14] The next President must make broadband Internet access at high speeds and reasonable prices a focus of his technology policy.

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
Broadband Access	■ Encourage private investment to facilitate build-out of high-speed Internet access infrastructure, but in the event of "market failures or other obstacles" that are blocking adequate infrastructure deployment, support local governments in building out the infrastructure for high-speed Internet access.	■ Get broadband to every community in America through a combination of reform of the Universal Service Fund, better use of the nation's wireless spectrum, promotion of next-generation facilities, technologies and applications, and new tax and loan incentives. ■ Support federal intervention to encourage more ubiquitous broadband Internet access; encourage innovation at a local level through federal support of public/private partnerships to bring broadband to communities lacking it.
Universal Service	■ Oppose expanding or repurposing the Universal Service Fund to fund deployment of high-speed Internet access to underserved areas. ■ Create a "People Connect Program" that rewards companies that offer high-speed Internet access services to low income customers by allowing companies to offset their tax liabilities for the cost of the service.	■ Establish a multi-year plan, with a date certain, to change the Universal Service Fund from a program that supports primarily voice communication to one that supports affordable broadband, with a particular focus on under-served communities.
Wireless Spectrum White Space	■ Auction inefficiently-used wireless spectrum to companies that will instead use the wireless spectrum to provide high-speed Internet service options.	■ Review existing use of wireless spectrum. Create incentives for smarter use of government spectrum and establish new standards for commercial spectrum to bring affordable broadband to rural communities.
Network Neutrality	■ Oppose 'Network Neutrality' legislation. Support the 'Four Internet Freedoms' articulated by former FCC Chairman Michael Powell. The Four Freedoms call upon the broadband network industry to voluntarily preserve for broadband consumers: Freedom of Access to Content, Freedom to Use Applications, Freedom to Attach Personal Devices, and Freedom to Obtain Service Plan Information.	■ Support 'Network Neutrality' legislation as a means to protect the openness of the Internet. Advocate the principle that network providers should not be allowed to favor the content or applications of some websites and Internet applications over others.

BROADBAND AND TELECOMMUNICATIONS POLICY (CONTINUED)

Diversity of Media Ownership		■ Encourage diversity in the ownership of broadcast media, promote the development of new media outlets for the expression of diverse viewpoints, and clarify the public interest obligations of broadcasters who occupy the nation's spectrum. Oppose further consolidation of mass media.[15]
Cellular Phone Taxes	■ Ban new taxes on cellular phone usage.	
A la Carte Cable Pricing	■ Support requiring cable companies to offer channels on an a la carte basis to subscribers.	■ Campaign currently reviewing this issue; has not yet stated a position.

DIGITAL PRIVACY AND SECURITY POLICY

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
Cyber Security	■ Enhance cyber security and critical information infrastructure protection. ■ Require that every company have security policies to deal with ID theft and provide notice to consumers of and when data breaches occur. ■ Fully fund the Federal Trade Commission to fight cyber crimes.	■ Enhance cyber security and critical information infrastructure protection. ■ Increase the Federal Trade Commission's enforcement budget and step up international cooperation to track down cyber criminals. Punish spam, spyware, telemarketing, and phishing intrusions into the privacy of American homes and computers. ■ Initiate a "Safe Computing R&D effort" to develop next-generation secure computers and networking.
Surveillance Laws and Intelligence Gathering	■ Perform intelligence gathering on U.S. citizens only under the rule of law.	■ Update surveillance laws and ensure that law enforcement investigations and intelligence-gathering related to U.S. citizens is done only under the rule of law.
Protecting Children on the Internet	■ Have the federal government display greater leadership in stopping digital predators. ■ Promote educational efforts among consumers in schools, provide incentives for continued investment by American industry in the development of more secure technologies, and have the government vigilantly enforce personal security and privacy laws.	■ Toughen penalties, increase enforcement resources, improve forensic law enforcement tools and foster collaboration to identify and prosecute those who attempt to use the Internet to exploit children. ■ Require that parents have the option of receiving parental controls software that both blocks objectionable Internet content and prevents children from revealing personal information from their home computer.

SKILLED WORKFORCE POLICY

One of the strengths of the U.S. national innovation system has historically been its ability to use scientific and technological talent effectively, regardless of its source, ITIF finds in *Global Flows of Talent: Benchmarking the United States.*[16] The global talent imperative requires that the United States implement policies that will both produce a domestic workforce equipped with globally-demanded skills and be receptive to skilled foreign workers who wish to pursue their talents in the environment of economic opportunity that the United States affords.

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
America COMPETES Act	■ Support fully funding and implementing the America COMPETES Act.	■ Support fully funding and implementing the America COMPETES Act.
Immigration of High-Skill Foreign Workers	■ Ensure high-skill workers educated in the United States can stay after graduation. ■ Tie H-1B visa caps to market conditions and allow visa holders to renew their visas while waiting for permanent-status green cards.[17] ■ Reforms should eliminate artificial limits and allow the Department of Labor to set visa levels appropriate for market conditions.	■ Increase the number of permanent visas issued to high-skill foreign workers. ■ Support a temporary increase in the H1-B visa program as a stopgap measure until comprehensive review and reform of the visa system can occur.[18] ■ Create a "fast-track" system that allows foreign students receiving advanced technical degrees from U.S. universities to receive an employment-based visa without having to return to their home country.
Community College System	■ Reinvigorate the community college system, by supporting grants for educational instruction in digital and wireless technologies, targeted to minorities and low-income students.	■ Create a Community College Partnership Program that will help support enhanced STEM education opportunities at community colleges, and support efforts to help students transition to four-year institutions.

EDUCATION POLICY

If America is to succeed in the innovation-powered global economy, boosting math and science skills will be essential, as ITIF explains in *"Addressing the STEM Challenge by Expanding Specialty Math and Science High Schools."*[19] Each candidate acknowledges the need to strengthen math and science education in the United States, with Obama offering more detail than McCain.

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
Support for Math and Science Education	■ Devote 60 percent of Title II funding for incentive bonuses for high-performing teachers to locate in challenging educational settings, for teachers teaching math and science, or for teachers achieving considerable student improvement.	■ Establish 40,000 Teaching Service Scholarships, of up to $25,000 each, for recruiting math, science, and technology degree graduates to teach math and science, especially in public elementary and secondary schools. ■ Create Teacher Residency Academies that will add 30,000 new teachers to high-need schools. ■ Increase research grants and graduate fellowships for early-career researchers to encourage young scientists to enter STEM fields.[20] ■ Invest in science education R&D to determine which types of curriculum and instruction work best.[21] ■ Triple the number of National Science Foundation Graduate Research Fellowships from 1,000 to 3,000. ■ Create a STEM education committee within the office of Science and Technology Policy (OSTP), to develop coherence among federal STEM education efforts.
Technology in Public Education	■ Reform the "Enhancing Education Through Technology Program" by targeting $500M in current federal funds to build new virtual schools and support the development of online course offerings for students. ■ Create a $250M competitive grant program to support states that commit to expanding online education opportunities.	■ Create a $500M matching federal education technology program fund that creates new technology-based curriculum and integrates technology into the classroom through simulations, interactive games, and tutoring.
Broadband Internet Access in Public Schools	■ Ensure all students have broadband Internet access at school.	■ Ensure all students have broadband Internet access at school. Support e-Rate initiatives.

Performance-Based Pay	■ Support 'Merit Pay' for teachers and improved teacher testing. ■ Devote 5 percent of Title II funding to states to recruit teachers who graduate in top 25% of their class.	■ Support a 'Master Teacher' concept in which teachers have a say in how their performance is measured, graduate to higher professional levels, and conduct apprenticeships to assist younger teachers. Pay 'Master Teachers' more.
Vouchers & Charters	■ Place emphasis on improvement through competition among schools, accountability, and standards-based assessment of school performance. Encourage competition for most effective, character-building teachers, hire them, and reward them. Support "school choice" for parents.	■ Support creation of charter schools to compete with underperforming public schools.
Educational Savings Accounts	■ Create tax free savings accounts for parents saving for educational expenses.	
Higher Education Tax Benefits	■ Simplify tax code regarding higher education tax benefits.	■ Introduce a new American Opportunity Tax Credit of $4,000 towards a college education. Recipients of the credit would be required to conduct 100 hours of public service a year.

PATENT REFORM AND INTELLECTUAL PROPERTY PROTECTION

The U.S. patent system suffers from three key problems, as ITIF describes in *Patents Pending: Patent Reform for the Innovation Economy.*[22] First, the patent system is rife with delay, second, it issues too many poor quality patents, and third, it has seen a dramatic increase in patent litigation (due to the issuance of so many poor quality patents) which has ironically imposed a significant tax on the U.S. innovation system. Both candidates are cognizant of these challenges, and include patent reform proposals in their technology and innovation policies.

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
Adequate Resource Levels for U.S. Patent and Trademark Office	■ Push for greater resources for the United States Patent and Trademark office. Provide new resources to hire and train the quality examiners that are needed to ensure timely, predictable and effective patent review.	■ Allocate additional resources to the United States Patent and Trademark Office [to hire more patent examiners and thus increase the examination time for each patent granted.]
Alternative Approaches to Resolve Patent Disputes	■ Provide alternative approaches to resolve patent challenges apart from legislation (but no further details given.)	■ Offer patent applicants the option of a rigorous and public peer (citizen) review that would produce "gold-plated patents" less vulnerable to legal challenges.
Enhance Intellectual Property Protection and Enforcement Activity	■ Favor cracking down on intellectual property protection, both on the Internet and off.	■ Work to insure intellectual property is protected in foreign markets, and promote greater cooperation on international standards that allow U.S. technology to compete on a global basis.
Digital IP Rights	■ Support punishing citizens who illegally download songs, but through measures less severe than incarceration.[23]	■ Shift the balance between the rights of intellectual property holders and the consumers of intellectual property more towards consumers.

TRADE POLICY

With 95 percent of the world's citizens living beyond U.S. borders, open trade policies are crucial to afford U.S. businesses access to globally-scaled markets. But global trade is at a crossroads with the collapse of the Doha round negotiations and the emergence in many countries of neo-mercantilist trade practices that erect unfair and protectionist policies that systematically disadvantage foreign competition. As ITIF concludes in *The Rise of the New Mercantilists: Unfair Trade Practices in the Innovation Economy,* the United States must play a leadership role in rigorously enforcing international and bi-lateral trade agreements and showing that open, market-driven commerce is the best way to achieve sustainable global prosperity.[24]

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
General Approach to Trade Policy	■ Promote fair trade agreements to give America's high-tech workers the opportunity to compete in the global marketplace.	■ Make trade policy consistent with commitment to demand improved labor and environmental practices worldwide. Vigorously enforce U.S. companies' rights in trade agreements by bringing more cases before the WTO.
NAFTA	■ Support the North American Free Trade Agreement in its current form.	■ Immediately amend the North American Free Trade Agreement with the leaders of Mexico and Canada. Demand tougher labor, environmental and safety standards that are 'enforceable.'[25]
CAFTA	■ Promote passage of the Central America Free Trade Agreement by ratifying pending trade agreements with Colombia, Panama, and Peru.	■ Oppose the Central America Free Trade Agreement (as currently drafted) on grounds that it does not adequately protect U.S. labor (no assistance for displaced workers) and does not have adequate environmental standards for Central American countries.
Fast-Track Trade Promotion Authority	■ Support "fast track" presidential negotiating authority on trade pacts.	■ Does not support giving the President "fast track" authority. Supports a modified version of this authority if it gives more power to Congress and includes built-in labor and environmental requirements.
Enforcement of U.S. Rights in Trade Disputes	■ Sustain current level of activity in bringing trade infringement cases.	■ Fight for fair treatment of U.S. companies abroad in trade disputes; suggests that an Obama administration would bring additional cases before the WTO to enforce U.S. rights under WTO agreements.
Trade Adjustment Assistance for U.S. Workers	■ Support reform to unemployment insurance to cover anyone who has lost their job regardless of displacement, as an alternative to trade adjustment assistance.[26]	■ Improve transition assistance for American workers affected by international trade by extending Trade Adjustment Assistance (TAA) to workers in service industries who lose their jobs to foreign competition (currently it is only available to manufacturing workers.)
Environmental and Labor Provisions in Trade Agreements	■ Oppose adding mandatory environmental and labor provisions to trade agreements.	■ Support making environmental and labor provisions key preconditions for U.S. trade agreements going forward.

ENERGY AND ENVIRONMENTAL POLICY

	JOHN McCAIN, R-AZ	BARACK OBAMA, D-IL
General Approach to Energy Policy	■ Develop a national energy strategy, the Lexington Project, which will lead America to strategic energy independence, especially through relying on the technological prowess of American industry and science to create clean energy technologies, and by increasing production of nuclear energy, and expanding domestic production of oil and gas.	■ Create a New Energy Economy as an alternative to oil and gas; promote energy independence through the new energy economy. ■ Reduce U.S. energy intensity by 50 percent by 2030 through more efficient and cleaner energy production and consumption, development of alternative energy sources, and conservation. Invest considerably in clean and renewable energy technologies.
Pollution Credits ('Cap and Trade' Program)	■ Implement a market-based cap-and-trade system to cut greenhouse gas emissions by encouraging the innovation of alternatives to carbon-based fuels with the goal of reducing U.S. carbon emissions to 60 percent below 1990 levels by 2050. Incremental lower caps on allowed emissions would start in 2012.	■ Create a cap-and-trade program for energy companies to auction for pollution rights. Reduce carbon emissions by 80 percent below 1990 levels by 2050 (with intermediate goal of reducing greenhouse gas emissions to 1990 levels by 2020.)
Federal R&D Funding for Energy Technologies	■ Devote $2B annually to research that will foster the clean use of coal. ■ Award a $300M prize for the developer of an advanced battery technology.	■ Invest $150B over ten years in clean energy, including biofuels and fuel infrastructure, and accelerate the commercialization of plug-in hybrids and development of commercial-scale renewable energy. ■ Extend the federal renewable energy production tax credit (PTC) for five years.
Alternative and Renewable Energy	■ Promote nuclear energy and safe storage of spent nuclear fuel. When advanced recycling technologies are developed and eventually turn the fuel into a valuable commodity, the public in communities where the reactors are located should share in its economic benefits.	■ Create a Clean Technology Venture Capital Fund, funded by an annual $10B investment over five years, to ensure that promising technologies move beyond the lab and are commercialized in the U.S.
Energy-Related Technology Transfer		■ Create a Technology Transfer program within the Department of Energy dedicated to exporting climate-friendly technologies to developing countries.
Smart Energy Grid	■ Deploy SmartMeter technologies that give customers a more precise picture of their overall energy consumption and use the electricity grid more effectively.	■ Invest in a digital smart energy grid.
Nuclear Energy	■ Construct 45 new nuclear plants by 2030 with the ultimate goal of constructing 100 new plants.	■ Support R&D into a new generation of nuclear electric technologies that address safety, waste, disposal, cost and proliferation risks.

ENDNOTES

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*Editor's Note: ITIF originally released the *Comparing the Candidates' Technology and Innovation Policies* report on September 10, 2008. On September 25, 2008 the Obama Campaign released a revised Science and Innovation Plan. ITIF accordingly updated its *Comparing the Candidates' Technology and Innovation Policies* report on September 29, 2008 with the latest positions of the Obama and McCain campaigns with regard to science, technology, and innovation.

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The Information Technology and Innovation Foundation (ITIF) is a nonprofit, non-partisan public policy think tank committed to articulating and advancing a pro-productivity, pro-innovation and pro-technology public policy agenda internationally, in Washington and in the states. Through its research, policy proposals, and commentary, ITIF is working to advance and support public policies that boost innovation, e-transformation and productivity.

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