

WORKING DRAFT

C. L. Cooper
Revised October 11, 1992

U.S. AND JAPAN DECISION MAKING
IN ENERGY AND THE ENVIRONMENT --
A COMPARATIVE STUDY

CHAPTER I
THE AMERICAN EXPERIENCE
AN HISTORICAL PERSPECTIVE

A comparative study of American and Japanese policies toward energy and the environment cannot be informative or insightful unless perspective is brought to bear. After all, neither approach emerged, like Venus, fully-formed from the half shell; the current policy of each country is a product of a host of social, political, psychological, geographic, cultural and economic influences which have been played out over time.

Few industrialized countries provide a greater set of contrasts than the United States and Japan;¹ in American parlance they do, indeed, comprise the "odd couple." At the risk of over-simplification, consider these physical,

¹Switzerland, Holland and Great Britain also invite contrasts with the United States, although they would not be as stark as that of Japan.

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institutional, historic and cultural differences:²

Japan and the Japanese

USA and the Americans

Ancient Nation	New Nation
Island Country	Continental Country
Violent Natural Environment	Benign (mostly) Natural Environment
Shinto-Buddhist religion dominant	Christian religion dominant
Inward Looking	Gregarious
Resource Poor	Resource Rich
Confined	Spacious
Minimalist	Bigger is Better
Homogeneous Society	Heterogeneous Society
Structured, Stratified	Loose, Socially Mobile
Tradition of Sacrifice for Public Good	Quest for Instant Gratification
Adaptive	Innovative
Ideological	Pragmatic
Followers	Individualistic
Restrained, Suspicious of Outsiders	Open, Trusting
Seek Consensus	Welcome Controversy, Litigious
Newly Democratic	Deep Democratic Roots

²Obviously, each of these characteristics should be qualified by "relatively," or "quite," or "usually."

Locally Rooted
Savings-Oriented
Emphasis on Form

Geographically Mobile
Spending-Oriented
Emphasis on Substance

But note, also, some important similarities:

Japan and the Japanese

USA and the Americans

High GNP Per Capita
 Urban/Metropolitan Sprawls
 Industrialized
 Gadget-Oriented
 Well-Educated
 Optimistic
 Temperate Climate
 Automobile-Fixated
 High Medical Standards

Some of these national characteristics are more relevant to a comparative analysis than others, but they (more or less) add up to the judgement that both societies are energetic and intelligent, and both are materially and culturally rich. On the other hand, the Japanese, for their part, are consensual, formal and constrained, while the Americans are diverse, informal and expansive. But if one had to choose a single factor which, over the centuries, has had a major influence on the Japanese character and Japanese attitudes, surely resource deprivation would not fall far from the mark. As for America and the Americans, the influence of abundance cannot be overstressed.

This introductory chapter will explore the implications that the blessing of abundance has had on shaping America's environmental and energy policies. The Japanese approach to these will be dealt with at some length in the Japanese volume.

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If the ethic of stewardship, the habits of conservation and the concept of environmental protection have a common intellectual basis, surely a sense of limits, a feeling that tomorrow's harvest may be less than today's, must be a prominent component. But for almost two centuries most Americans were convinced that, while today was good, tomorrow would be better. There was an indomitable optimism -- even in dark days of war and depression, the glass remained "half full." The enormous scale of the America continent, especially in comparison with the "old countries" of the new arrivals, reinforced a perception of unlimited abundance: interminable coastlines, towering mountain ranges, vast forests, endless rivers, boundless prairies, giant lakes. The frontier extended into the horizon; water and coal (and later oil) and forests were aplenty; oceans and rivers teemed with fish; 160 acres of good land were available virtually for the asking.³ Until the Civil War, even city dwellers, whose living space was measured in square feet rather than acres, had little concept of social stewardship. The idea that one generation had a responsibility to guard and nurture a precious public heritage for the sake of

³American landscape paintings prior to World War I convey a sense of space and boundless opportunity, for example, in the paintings of the Hudson River School. In contrast, Japanese landscape paintings of roughly the same period are tight, controlled, confined.

generations to follow was given hardly a thought -- except, as we shall see, by romantics and transcendentalists like Ralph Waldo Emerson and Henry David Thoreau.

The vast majority of Americans were convinced that their land was blessed with everlasting abundance, and that, as revealed in the Book of Genesis, man had a God-given right to exploit nature.⁴ The early Puritan/Christians of New England took it as their stern duty to work and produce. No wonder, then, that the reckless consumption and wanton destruction of America's resources were regarded as right and proper. "...the North American continent itself seemed to deny the need for any controlling action. There was little thought ... of any possible day of reckoning, and the opening of the West seemed to postpone the possibility indefinitely."⁵

In the aftermath of the Civil War, America virtually burst its seams. Cities grew out and up. Railroads crossed and crisscrossed the continent. Bottomless mines and inexhaustible wells provided minerals and fuel for engines, machines, workplaces and homes. Advances in science, innovations in technology and changes in lifestyles created a surge in the demand for and supply of new processes and new things. The flood tide of immigrants and the entry of former slaves into the workforce both fed demand for and bolstered the supply of goods and services.

⁴It would be interesting, from the point of view of this project, to compare Christian and Shinto Buddhist attitudes toward nature.

⁵Suzanne Fries Liebetrau, "Trail Blazers in Ecology, The American Ecological Consciousness, 1850-1864" (Ph.D. dissertation, University of Michigan, Ann Arbor 1972, unpublished), p. 9.

When the American wilderness became settled toward the end of the nineteenth century, many felt that the nation had stepped across a threshold from youth into middle age. Indeed, historian Frederick Jackson Turner equated the frontier with a veritable "fountain of youth" for American society⁶ and lamented its settlement.

But there were new "frontiers" within sight and reach. Turner had barely written his essay in 1893 when the forces of economics and technology were being marshalled to lead the nation toward even more exciting horizons. And hardly had the last wagon train gone west when there was a veritable tidal wave of immigration from Europe. Superimposed on this was a great internal migration from countryside to the city. In America's infancy, barely three percent of the population were city dwellers; only five cities had populations of more than eight thousand. A century later, almost one-third lived in towns or cities. By 1890, Manhattan and Brooklyn each boasted more than two million people; Chicago and Philadelphia each sheltered more than a million. By 1910, almost half of all Americans were urbanites; by 1930, two-thirds; by 1990, more than three-fourths. For these millions upon millions, America's future lay, not in the vast prairies and high plains of the west, but in the crowded cities and towns along the eastern seaboard, along the southern shores of the Great Lakes and the banks of America's great rivers. According to historian

⁶Frederick Jackson Turner, "The Significance of the Frontier in American History," Selected Essays of Frederick Jackson Turner, ed. Ray Allen Billington (Englewood Cliffs, N.J.: Prentice-Hall, 1961), pp. 37-62.

David Potter, more Americans changed their economic status and expectations by moving to the city than to the frontier.⁷

Americans -- city and rural dwellers alike -- born in the mid-1800s would witness a complete technological transformation of their society and their personal lives. More things for more people was the driving force behind the mills, factories and mines. But, while the inventions and innovations that crowded the post-Civil War period were perceived by most people as increasing their standard of living, there were an influential few who found all this vaguely threatening. They sensed that land and forests, minerals and water, fish and game would not always be available simply for the grabbing, that precious irreplaceable resources were being taken for granted. There was a gradual, creeping realization that the every-man-for-himself attitude of the early Westward rush, though it did much to settle and populate the continent, had, at the same time, led to wasteful and destructive logging, hunting and farming.

Early manifestations of this concern were expressed by a group of New England essayists who, in romantic, almost elegiac terms, extolled the beauties of nature and warned against its desecration. In 1836, Ralph Waldo Emerson wrote a treatise, "Nature," which not only influenced many of his contemporaries, but also provided pleasure and enlightenment to readers over the course of a century and a half.

⁷David Potter, People of Plenty (Chicago: University of Chicago Press, 1954), p. 94.

Of all Emerson's intellectual followers, the most avid and probably the best known to succeeding generations was Henry David Thoreau -- naturalist, writer, pamphleteer and pencil maker. Thoreau may properly be regarded as the father of ecology.⁸ In any case, he is reputed to have coined the word "ecology" (in a letter published in the Atlantic Monthly in 1858). His Walden, written in 1854, was virtually ignored at the time, but is now regarded as standard reading for all would-be ecologists. "Our village life would stagnate," Thoreau warned, "if it were not for the unexplored forests and meadows which surround it ... we can never have enough of nature. We must be refreshed by the sight of inexhaustible vigor."⁹

Thoreau's dreamy transcendentalism was in sharp contrast to the crisp scientific approach to flora and fauna which began to blossom just as Walden was being written. Such scientific groups as the U.S. Agricultural Society and the American Geographical Society of New York were both organized in 1852; Asa Gray's botanical works began appearing soon after; Louis Agassiz founded the Howard Museum of Comparative Zoology in 1858; Charles Darwin's Origin of the Species was published in 1859; The U.S. Department of Agriculture was founded in 1862 (the year of Thoreau's death); the National Academy of Sciences was established in 1863; and George Perkins Marsh wrote Man and Nature in 1864. In this early plea for conservation, Marsh admonished that

⁸Suzanne Fries Liebetrau, op cit., p. 245.

⁹Henry David Thoreau, Walden, ed. Joseph Wood Krutch (New York: Bantam Books, 1981), p. 339.

"the human race seems destined to become its own executioner -- exhausting the capacity of the earth to furnish sustenance."¹⁰

As the nineteenth century folded into the twentieth, America seemed to turn inward, to engage in collective introspection. Frederick Jackson Turner apparently touched a sensitive chord when he equated the closing of the frontier with the end of America's "renewal" and "development." Conservation, the practice as well as the concept, claimed the attention of Americans. George Perkins Marsh was no longer a lonely, distant voice; his concerns were now echoed by writers, churchmen, civil servants, amateur and professional naturalists, newly-minted and long-established tycoons, and even politicians (mostly from the eastern seaboard, to be sure). But it was far from a rank-and-file movement -- and this turned out to have serious implications.

In this period the early system of national parks was established; the U.S. Geological Survey was organized; the Sierra Club and the Audubon Society were founded; the Bureau of Reclamation was formed. And, as conservation became a watchword in the Nation's Capitol, a major milestone would be reached in America's journey from pristine wilderness to industrial super-power.

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¹⁰Marsh, George Perkins, Man and Nature; or, Physical Geography as Modified by Human Action. Edited by David Lowenthal, Cambridge, Massachusetts; Belknap Press of Harvard University Press, 1965, p. 286. As quoted in Liebetrau, op cit.

"...at the beginning of my term of service as President," Theodore Roosevelt recalled several years later, "I took up the cause of conservation. I was already fairly well awake to the need of social and industrial justice; and, from the outset, we had in view, not only the preservation of natural resources, but the prevention of monopoly in natural resources, so that they should inhere in the people as a whole."¹¹

Roosevelt was, indeed, ardent and persistent in his efforts to conserve America's natural heritage, despite opposition in Congress (primarily by western Congressmen). A host of institutional and political arrangements to protect the nation's resources from rapacious hunting, mining, railroading and manufacturing interests were consummated during the seven years of his presidency.

Roosevelt's Message to Congress in 1907 captures not only the fervor of his views, but also reflects his concern about the anti-conservation sentiment on Capitol Hill. "To waste, to destroy, our natural resources, to skin and exhaust the land instead of using it so as to increase its usefulness," Theodore Roosevelt warned members of Congress and his countrymen generally, "will result in undermining in the days of our children the very prosperity which we ought by right to hand down to them amplified and developed."¹²

¹¹Roosevelt quote - (Outlook, October 12, 1912), Mem. Ed. XIX, p. 437; Nat. Ed. XVII, p. 317.

¹²President Theodore Roosevelt, Message to Congress, December 3, 1907.

In the wake of all the research, policy decisions and general consciousness-raising that has occurred in the United States, Japan and elsewhere over the past 20 years or so, the term "conservation" tends to be closely associated with environmental protection. But at the turn of the century, the concept of conservation had a somewhat different meaning. The core of the conservation movement of the late 1800s-early 1900s was basically elitist. The notion had a significant science component and was of a piece with Roosevelt's "progressive" approach toward governance, reflecting the moralistic and technological orientation of Roosevelt's constituency. In short, the early conservation movement "was closely related to the practice of scientific management. There was some emphasis on the limits of resources and the need to save resources to live within those limits, but that emphasis was minor and ephemeral. The major focus was on the way in which science and technology could eliminate waste ..."¹³

After months of preparation, Roosevelt convened a National Governor's Conference on Conservation in May 1908. The Conference included the governors of all the states, other dignitaries and leading authorities on America's natural resources. Also attending were "prominent American scientists, the first time that they had met on an equal footing with statesmen." The President spoke for almost an hour and, according to some participants, "it

¹³Samuel Hayes, "The Limits-to-Growth Issue: A Historical Perspective," in *Growth in America*, ed. Chester L. Cooper (Westport, Connecticut: Greenwood Press, 1976), p. 115.

was perhaps the best speech Roosevelt ever made."¹⁴ The Conference spawned 36 state conservation commissions and a National Conservation Commission.

The National Commission was tasked with making an inventory of the nation's natural resources. Although The Governor's Conference of 1908 and the National Commission can truly be said to form the foundation of America's early conservation program, the foundation turned out to be shaky. Indeed, Roosevelt's conservation initiative had a short honeymoon. Congress was suspicious of the Commission and effectively prevented much of the Executive Branch from participating in the Commission's activities including the resources inventory effort.

Congressional opposition persisted during the remaining months of Roosevelt's tenure and throughout the administration of President William Howard Taft. Actually, Taft himself, wittingly or unwittingly, aided Congress in braking Roosevelt's progress toward conservation by appointing an anticonservationist as Secretary of Interior. Not until 1916, under President Woodrow Wilson would the next major conservation initiative be launched -- the establishment of the National Park Service.

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World War I diverted America's attention from conservation to production. By 1920, under the encouragement of postwar presidents Harding

¹⁴Paul Russell Cutright, Theodore Roosevelt, The Making of a Conservationist, (Urbana and Chicago:University of Illinois Press, 1985) p. 228.

and Coolidge, the nation became preoccupied with a "return to normalcy" -- and "normalcy" in the 1920s meant building, expanding, growing, spending; it most assuredly did not mean conserving, preserving, saving. The novelist Sinclair Lewis captured (more accurately, caricatured) the spirit of that decade in his legendary real estate operator, George Babbitt. "The sooner a man learns he isn't going to be coddled...the sooner he'll get on the job and produce - produce - produce!" The town's business center was "big, and Babbitt respected bigness in anything..."¹⁵

And, then came The Crash.

Even if President Herbert Hoover was of such a mind, the stock market meltdown in October 1929 and the deep economic depression that followed hardly provided the political or economic atmosphere in which to launch new conservation and environmental initiatives. But in 1932, a more imaginative, more charismatic personality took over the White House and changed the course of American social and economic history. Franklin Roosevelt and a team of proactive, farsighted, socially conscious assistants and advisors undertook a host of bold, innovative actions, many of which are still prominent features of American environmental and conservation policy. In 1933, the Tennessee Valley Authority (TVA) was established with an early mission to assess the environmental impact of a series of power and irrigation dams to be constructed on the Tennessee River. Also in 1933, the Civilian Conservation Corps (CCC) was organized to engage in conservation, beautification and

¹⁵Sinclair Lewis, Babbitt, in Lewis at Zenith, A Three-Novel Omnibus, (New York: Harcourt, Brace & World, Inc., 1961), pp. 348, 357.

reclamation projects (and, of course, to provide employment). The TVA is now a major force in the life of America's southeastern states and the work that was undertaken by the CCC still graces the American landscape.

By far the greatest impetus to American conservation/environmental policy was provided as a consequence of the drought of 1934 -- the worst in American history. The Dust Bowl still, decades later, evokes dark images of devastation and disaster, abandoned farms and broken families; America paid a high price for one hundred and fifty years of land abuse. As if in retribution for past sins, Congress passed a spate of conservation-directed legislation during the next decade: the Taylor Grazing Act (which regulated grazing on nationally-owned land), the Soil Conservation Act, the Flood Control Act, the creation of the Fish and Wildlife Service and the Bureau of Land Management. And, reflecting public concerns about the environment, two major advocacy groups were formed -- the Wilderness Society and the National Wildlife Federation.

World War II, its preparatory phase and its immediate aftermath, replicated the experience of World War I; in the drive for more military and ancillary goods and services, little thought and less action was given to such matters as conservation. When the war was over, Americans who had lived through the thirties when choices were stark and expectations modest, wallowed in new-found affluence. Although there were isolated instances of concern and action -- anxiety about instances of excessive radioactivity around nuclear test sites, the enactment of the Federal Water Pollution Control Act --

attention during the postwar years was focused on production and consumption, not on resource conservation or environmental protection.

Looking back on the American conservation movement, one environmental historian notes that, in essence, conservation advocates and practitioners who were active during the first six decades of this century "affirmed, and did not seriously question, the perspective of an abundant and unlimited future if ...science and technology were used to manage resources 'wisely'." But by the 1960s this approach merged into and was even replaced by "the 'environmental movement,' with a strong connotation of 'quality' or 'amenity' rather than efficient economic development' -- The phrase 'environmental quality' arose, embedded in such public action as the 'Council on Environmental Quality,' and soon began to compete with the older word 'conservation.'"¹⁶ Thus, the National Environmental Protection Act, which created the Council, established "environmental quality" as a national priority and stressed "the national goal of a quality life in a quality environment for all Americans."¹⁷

"May you live in interesting times" is a curse or threat said to originate in ancient China. For both Americans and Japanese, the 20th century has indeed been 'interesting': rapid technological change, frequent natural and man-made crises and almost instantaneous communications. For the purpose of this essay, however, the decade of the 'sixties, starting with the New Frontier and ending in the Vietnam Quagmire, was especially 'interesting.'

¹⁶Samuel Hays, op. cit., pp. 117-119.

¹⁷As cited in U.S. Council on Environmental Quality Environmental Quality, Twentieth Annual Report to Congress, (Washington, D.C.: Government Printing Office, 1990), p. 22.

By the mid-'sixties, America confronted the mounting human, political and economic costs of an unpopular war. Superimposed on this turbulent experience were nationwide civil rights demonstrations, dramatic anti-poverty protests and a growing feminist movement. As if America did not already have a full plate of emotion-laden causes, the decade spawned yet another crusade - a crusade to revive the conservation movement that had been languishing since World War I. Actually, what emerged was not simply a renaissance of conservation, but a whole new approach to addressing the relationship between man and nature. From now on, conservation would be just one element of the overarching challenge of "environmental protection."

Stewart Udall, President John F. Kennedy's Secretary of the Interior, was in the forefront of the environmental protection movement. In 1961, he sounded the theme of the new crusade: Regulating the use of the earth's resources was no longer enough; society had a solemn ethical responsibility to preserve the global environment. In the years that followed, the Kennedy and Johnson Administrations presided over the first Clean Air Act, the Nuclear Test Ban Treaty, the Wilderness Act, the Water Quality Act, the National Conference on Natural Beauty, the Wild and Scenic Rivers Act and the National Trails System Act. Meanwhile, experts and publicists fed and reinforced public concern about national and international environmental issues: Rachel Carson's Silent Spring; Hans Landsberg's Natural Resources for U.S. Growth; Kenneth Boulding's The Meaning of the 20th Century; Barry Commoner's Science and Survival; Rene Dubos' Man Adapting; Paul Ehrlich's The Population Bomb.

Worthy of note, too, is the fact that the Environmental Defense Fund was founded in 1967, and Greenpeace in 1969.¹⁸

Of all the environment-related developments that occurred during the 'sixties, the National Environmental Policy Act of 1969 was probably the most significant. This Act heightened the sensitivity of every U.S. government agency to the issue of environmental protection. It not only directed every federal body to include environmental considerations in decisionmaking, but it also provided a process (environmental impact analyses) by which such considerations had to be factored into federal agency initiatives.

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According to the Council of Environmental Quality's Twentieth Report to Congress, "1970 was the single most important year in this country's environmental history."¹⁹ It is hard to argue with this. For, in 1970, both the Council on Environmental Quality and the Environmental Protection Agency were established, Earth Day was inaugurated, the National Environmental Policy Act was implemented, the Clean Air Act was strengthened and the National Resources Defense Council was founded.

¹⁸A source for much of this information is The 1972 Information Please Environmental Almanac, compiled by World Resources Institute (Boston: Houghton Mifflin Company, 1992).

¹⁹Council on Environmental Quality, Environmental Quality, Twentieth Annual Report (Washington, D.C.: Government Printing Office, 1990). p. 3.

The Council on Environmental Quality (CEQ) was launched as an analysis and review group to "provide a consistent and expert source of review of national policies, environmental problems and trends, both long-term and short-term." The Council serves primarily as the environmental advisor to the White House and prepares the annual report to Congress on the nation's environmental quality. Its effectiveness has varied over the years depending on a given President's concern for environmental issues, and the degree of access the Council's Chairman has to the inner circles of the White House.

The Environmental Protection Agency (EPA), a regulatory and action body, was established in December 1970 to protect human health and the environment. Its activities include controlling and abating pollution of air, water, solid waste, pesticides, radiation and toxic substances. The Agency is charged with overseeing the Environmental Impact Statements which federal agencies are required to include in every policy proposal.

In the twenty years since the establishment of the Environmental Protection Agency, the federal government has assumed regulatory responsibility over such matters as air and water quality; drinking water; solid, hazardous and medical wastes; pesticides; toxic materials; endangered species; occupational health and safety; coastal zones; ocean pollution; noise levels; and the upper atmosphere. And, what of results? The record is a mixed one. Air quality over most urban areas in the United States has improved over what it was in 1970, and is certainly better than it would have been without the Clean Air Act and its amendments. A more doleful story can

be told about EPA's less-than-successful efforts to preserve wetlands, endangered species and bio-diversity.

The passage of the National Environmental Policy Act and the creation of CEQ and EPA put the United States squarely on the path of environmental protection. But governments, alone, cannot accomplish much unless their official policies and actions are based on public understanding and popular support. By 1970 it was already evident that there was a significant and growing constituency concerned about the environment. An elegant and sensitive essay written for an Aspen Institute Summer Workshop captured the new mood. In "The Environment: Too Small a View" Thomas Wilson set forth what became a keynote for the 1972 World Environmental Conference in Stockholm: "In the new view of Earth and the new awareness of the environment -- there is the potential for an emergent and unifying world outlook with political, worldly and spiritual implications of the first magnitude."²⁰ In a prescient passage, he offered an action agenda which, two decades later, is still appropriate: "...a wide variety of measures may be needed: a requirement on biodegradable materials; an end to planned obsolescence; inclusion of disposal costs in price calculations; new methods of using or recovering wastes; a moratorium on the launching of some types of new products; power rationing; all of which will have pervasive effects on traditional thoughts about economics, social policy, relations with governmental and other matters difficult to identify at this point."²¹

²⁰Thomas W. Wilson, Jr. "The Environment: Too Small a View," (Aspen, Colorado: Aspen Institute for Humanistic Studies, 1971), p. 11.

²¹Ibid, p. 20.

The Stockholm meeting in 1972 gave the environmental movement a big push forward; more than a hundred nations agreed to reduce global environmental risks. This had many manifestations in the United States: American courts were soon confronted by a firestorm of environmentally-based suits and countersuits. In virtually every community, grass roots movements monitored ecological risks and insults -- real and imagined, serious and trivial. And The Limits to Growth;²² and a spate of books rebutting such "doomsday" views sparked lively debates on growth vs. no growth.

Well before the decade came to a close, four grave and complex threats to the health of the Planet seized the attention of the science community -- acid rain, global climate change, hazardous and toxic wastes and erosion of the ozone layer. Although policymakers maintained a prudent distance from all of these issues, increments in federal funding accelerated research into causes and effects. And, with the excitement of new challenges and increases in research support, a host of freshly-minted Ph.D.s in the hard sciences flowed from the universities into environmental laboratories and think tanks.

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The 'seventies gave birth to yet another set of concerns: the supply of, and demand for energy -- two considerations that had been given hardly a thought by either the government or the public before the Arab oil embargo of 1973. During the early post-World War II years, the United States, with its

²²Donella Meadows et al., The Limits to Growth. A Club of Rome Report (New York; Universe Books. 1972).

vast reserves of oil, coal and natural gas, and with the bright new promise of nuclear power, had -- with some justification -- regarded itself as virtually self-sufficient in energy. During the Suez Crisis of 1956, for example, the sharp decline in Middle East oil exports caused considerable inconvenience in western Europe, but it had little effect on America. Less than two decades later, however, the Arab embargo had significant economic consequences throughout the United States; memories of that period still haunt energy policymakers in Washington.

In rapid succession, several federal agencies, each with more responsibilities and power than its predecessor, were organized and then replaced: the Federal Energy Office in 1973, the Federal Energy Administration in 1974, the Energy Research and Development Administration in 1975, and finally, the Department of Energy in 1977. The Department was given responsibility for long-term, high-risk research and development of energy technology; the marketing of Federal power; energy conservation; the nuclear weapons program; energy regulatory programs; and a central energy data collection and analysis program. In part, because DOE originally established at a time of crisis, much of its early efforts concentrated on short-term "fixes" rather than coherent long-term programs.

The growing dependence of the United States on the volatile states of the Middle East, was reason enough to warrant concern for America's energy security. But other dark clouds hovered on the horizon. By the end of the decade it was clear that coal, America's tried and true energy source, produced SO_2 , the cause of acid rain. Hardly had that been established, when

a growing body of scientists concerned with global warming pointed to CO₂ emissions from fossil fuel (principally coal) consumption as the principal "green-house gas." Meanwhile, the promise of nuclear energy was fading as a consequence of increasing costs and public opposition -- both of which escalated in the wake of the Three Mile Island accident in 1979.

In the face of all this, the U.S. government undertook ambitious and costly efforts to investigate nonnuclear alternatives to fossil fuels. Research, development and demonstration programs were put in place to harness the energy imbedded in the sun, winds, tides, bio mass, shale oil and geothermal reservoirs. A search was launched to find practical and competitive alternatives to petroleum. A major and costly research enterprise was organized to explore the potential of fusion energy. Even energy conservation received attention -- however alien and uncongenial that concept was to American consumers who, until not very long before, hardly found it necessary to think twice about the availability or the cost of energy.

As a result of technological advances, increasing energy cost and public awareness, oil imports had declined and a significant improvement had been made in energy efficiency by the early 1980s. (Alas, there have recently been sharp increases in oil imports and backsliding in energy efficiency.) Despite all these expensive and assiduous efforts, however, there have been no major technology breakthroughs in terms of fossil fuel alternatives, and the odds are high that America (and the rest of the world) will have to depend on fossil fuels for at least another generation.

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After twenty years of grappling with the thorny economic, technological, political and social issue involved, successive Administrations have been unable to develop a coherent national energy policy.²³ Other societies, the Japanese for example, maybe more skilled at addressing and resolving the pulls and tugs among a wide variety of energy producers and consumers, but America's competing interests and concerns have seriously complicated the task of energy policy making.

In 1979, the authors of a thoughtful examination of American energy prospects observed that an important reason for the contention surrounding American energy policy was the lack of a "clear national consensus on what the major long-term goals of U.S. energy policy should be."²⁴ This may no longer be the case; policymakers and the general public would probably agree with the energy policy objectives put forward at the 1991 meeting of the Aspen Institute's Energy Policy Forum:

- ◆ Energy should be available at the least cost.
- ◆ Energy prices should be relatively stable.

²³As of July 1992, a National Energy Plan is awaiting passage by Congress. But, as of this writing, there are still points of disagreement to still be resolved.

²⁴Sam H. Schurr et al. Energy in America's Future (Washington, D.C.: Resources for the Future, 1979), p. 1.

- ◆ Energy supply should be adequate and secure.
- ◆ Energy services should be environmentally acceptable.²⁵

Almost from the beginning of the post-World War II era, America was seized with three separate, but not unrelated international concerns: national security (which quickly became a matter of countering Soviet political and military threats), international economic recovery (which took the form of assisting selected nations in Europe and Asia to recover from the ravages of World War II) and international stability (which involved sending economic and technical assistance to newly emerging independent nations in Latin America, Africa and Asia). By the 1960s, however, there was a recognition that, despite America's bountiful natural endowment, the nation might become dangerously dependent on other, potentially unfriendly nations for vital energy supplies; the quality of life of every American could someday be at hazard. And so it was that, first, energy and, then, environmental considerations became significant elements of America's international outlook.

Virtually from their inception, both the Environmental Protection Agency and the Department of Energy had organizational elements concerned with international issues. EPA and DOE outposts have long been attached to many U.S. Embassies. "International environmental protection" and "energy security" are common phrases in diplomatic parlance and exchanges. And now that the prospect of global climate change has intruded onto the agendas of

²⁵"Oil, Energy Policy and National Security in the Post-Gulf Crisis Era, Forum Report (Aspen, Colorado: the Aspen Institute Energy Policy Forum, July 1992). Summary, p. 1.

national governments and international institutions, a merging of environmental and energy policy concerns has occurred in Washington -- and, of course, in Tokyo and other OECD capitals as well.

Energy and environmental considerations already play a significant role in U.S. economic assistance programs, and this is bound to increase in the wake of UNCED '92. "Sustainable development" is now broadly accepted as an international goal; sustainable development, by definition, implies economic development strategies that are sensitive environmental risks -- and this, in turn, will favor energy options for developing countries that will minimize SO₂ and CO₂ emissions.

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Two centuries, eight generations, mean nothing in geological time, hardly anything in the span of the human saga, very little from the perspectives of China, England and Japan. For the United States of America, however, the past two hundred years encompass much of the nation's history. During this brief moment, a vast continent was transformed from wilderness to --what? What did emerge out of the forests and plains and mountain ranges? For some, the answer is couched in terms of urban sprawls, high rises and shopping malls. For others, it nets out to be a wondrous gross national product and an impressive per capita national income. For still others, it takes the form of a paradisiacal amalgam (albeit one not without its warts) of life's necessities, conveniences and luxuries. To coin a phrase, it all depends.

No matter. What is important for our present enterprise is that the overflowing cornucopia of resources that typified the nineteenth century and spilled over -- in perception if not reality -- into the twentieth, is no longer an apt symbol of America's present condition. Indeed, the American environmental movement stems from a general acknowledgement that the pickings are leaner, the cup no longer 'runneth over'. Environmental protection is now imbedded in America's national consciousness. Although the past three decades have been marked by different, even contesting views about such matters as the relative emphasis that should be accorded to various programs, and by tensions with regard to private vs. public sector responsibilities, there has been little argument as to whether or not environmental protection is a proper governmental concern.

For most of EPA's existence, domestic issues -- air and water quality, the clean-up of toxic waste, the problems of lead and asbestos, strip-mine festeration, etc. -- have been the focus of attention. But, by 1990, several new, dire considerations escalated the significance of global environmental issues (and underlined the nexus between environment and energy). Government and industry finally -- and grudgingly -- acknowledged that acid rain, the erosion of ozone layer and the threat of global warming warranted serious attention not only by researchers, but by policymakers as well. Soon, international environmental protection became no longer the sole province of low level officials in EPA and DOE: the challenge thrust outward into other government agencies and congressional committees, and catapulted into the White House itself.

The world has become ecologically as well as politically and economically interdependent; it is now almost literally true that what happens anywhere affects people everywhere. The U.S. is now concerned not only about its own polluted waters and waste dumps, but also about rainforest destruction and worldwide endangered species. In the aftermath of the World Summit, the health of the global environment will continue to be prominent on the political agenda of governments throughout the remainder of this century and well into the next.

Japan and the United States will play major roles in turning "sustainable development" from a slogan into a reality. The differences and similarities between the two nations will be factors in the success or failure of this high-stakes endeavor. Each nation's history will serve as a backdrop for its present and future environmental policy, and understanding these histories will facilitate a cooperative approach to global environmental protection and economic development.

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The Japanese counterpart to this chapter will address many of the issues discussed above from the perspective of Japan. But to an American observer, it would seem that, despite the profound physical and geographic differences between our two countries and the deep historic and cultural differences between our two societies, Japan and the United States have reached a philosophical consensus with regard to the global environment. The challenge now is to assure that this philosophical concord will be manifested in

harmonious and mutually reinforcing economic, political and environmental policies into and through the twenty-first century. But considering how far each has already come, and considering the contrast between the routes of travel, it is no Small Thing that we have reached common ground. Surely this suggests that we can and will continue the journey in tandem. Indeed, we have no choice: the stakes are high and the consequences of failure would be horrendous.