

PLANET POLICY

The earth is one place. It's covered mostly by ocean, and it's going through biochemical changes now at an unprecedented rate. We humans made this happen, and we humans—for many reasons, not just survival—must correct it.

I am a citizen of the United States, and as such impact the planet. The country is the most powerful, and polluting, nation on earth. Any policy it adopts can and should be a Planet Policy.

Sediments arrive in New Jersey waters from the Grand Banks or even farther, like Greenland; nuclear contaminants in California come from Fukushima, due to nuclear technology made in the USA; how we burn fuel in the Ohio River, or what we do with shale in North Dakota, affects a Gulfstream that impacts on the British Isles. The US is a part of a Planet and should organize itself as an Actor, very big and important, on the Planet.

Consider the US Department of Energy report, released on August 25, 2013, that world-wide use of energy, mostly for transportation and electricity, will surge 56% by 2040. There'd be a huge increase, granted, in production of hydroelectric and wind power, but also—the report predicts—hydrocarbons will account for 80% of all energy use and will cause a CO2 increase of 46%. The head of the World Resources Institute in Washington has said this “would be an exceedingly bad outcome for the environmental health of the world.”

Regardless of exact numbers, which will change of course, the fact is clear: we of the planet must adopt non-fossil energy resources now, on huge scale. We need a planet-scale view.

The Earth has two poles, normally covered in ice. From these poles, cold ocean waters flow away. Five huge currents flow north from Antarctica, past South America, past Africa, past Australasia, and two huge currents flow south from the Arctic, from Greenland to Cape Hatteras, and from the Bering Sea to just by Tokyo. The Antarctica-spinoff currents all extend to the Equator, and in the Indian Ocean beyond, while the Arctic-spunoff currents meet warmwaters bearing east and north, the Gulfstream and Kuroshio respectively, to dive deep and over millennia return to Antarctica. These currents have enormous biological wealth, and these currents—most notably the Antarctica spinoffs—drive the Earth's weather. The currents must be dealt with directly if one is to prevent climate catastrophe.

I learned about such Arctic and Antarctic circulation from Russian oceanographers. They got to know me through an incident at a Pan Am departure lounge in JFK Airport. One oceanographer liked the model I was carrying, of a building based on Matta-Clark's "Splitting" and Serra's "TWU". We began talking. I said I was also, and chiefly, mapping the ocean basins of the planet. He then explained the studies on Arctic-Antarctic exchange conducted by two institutes in then-Leningrad, together with Columbia University. I began putting the ocean basins together into polar projections. Now, all ocean and cloud circulation gets charted as a movement between Poles.

US national policy could be centered on the physical fact of polar spinoff and ocean circulation. I advocate cooperation with a number of countries, not just Russia.

The cooperation could extend to technology, with many countries. In 1982, for example, New York State sponsored a conference of scientists and engineers from throughout the United States and China to develop a renewable-hydrocarbon industry based on sea-plants. The scientists had many technical proposals, many projects, and they recommended a \$10 billion budget for R & D. In today's terms, that's the same as the \$20 billion outlay proposed by Mayor Bloomberg of NY City for a NYC-only response to the threat of sea-level rise.

A Columbia University meteorologist says that sea-level rise is a danger, yes, but probably not in the form of a storm like Sandy, and he says that we must all reduce or even reverse the melting of the polar icecaps. We must organize what we do around the icecaps.

This can be done today. This can be done this year.

This can be done in cooperation, or at least communication, with large economic powers like China and India, with the US—the one nation with both warm and cold ocean bodies—as planet model.

1.

Reduce sea-level rise.

Around the Mediterranean, which means "middle of the world," there are many remnants of former gulfs and lagoons which have dried up and become sub-sealevel basins with little life. These former gulfs and lagoons can be re-connected with the Sea, on the coast of Morocco, along the southern Mediterranean coast, in the

Red Sea, the Arabian/Persian Gulf and the Arabian Sea, and they can become sites of enormous growth of sealife, including warmwater plants, to yield methane fuel, fish and other goods.

We replace a Mideast policy with a Mediterranean-area policy. And we don't have our diplomats going there, visiting refugee camps, being blamed for having no solution for their need for meaningful work. Hundreds of thousands of refugees, and millions of underemployed youth, are bitter and rebellious about having no work. Given them work in giant engineering programs to expand the salt seas there, extending into the many sea-coast sabkhas. In Egypt, this means flooding the giant Qattara Depression, with inflows through a chain of sabkhas in eastern Libya, and in Tunisia, this means extending canals to flood giant sub-sealevel basins of Algeria, restoring what Herodotus had described as the Gulf of Triton. Proposals like this have been published for a century already; now do them. There's risk, there's much unknown, but doubtless these now-dried lagoons were once filled with seawater, and doubtless any project so vast would better serve the people than inaction. The practice is already tested inside the USA, by a California scientist, in a sub-sealevel depression near the Colorado River. Build on this practice. Make it happen. Learn as you do it. Mistakes will happen. But only by taking action and making some mistakes will anything useful and new be learned. We cannot be cringing in a corner about terrorists and about what happened in Benghazi when we could be allocating our already huge aid budgets to expanding the size of the Mediterranean Sea and its adjacent dry coasts, in the Red Sea, Gulf and Sahara Atlantic, thus absorbing up to 20% of predicted sea-level rise.

In a few other areas of the world, this reconnection of sub-sealevel troughs with the ocean can be done. The largest is Lake Eyre, Australia. Others lie on the Arabian Sea coast around India and Pakistan. What goes on there now is drought, fire, degradation to desert. Why not act? In concert with the people of like-dried out lands? Anyone in these countries angry with the United States would think again if they saw us taking such dramatic, big-scale and ecologically-useful action.

Anyone in these Mediterranean-region countries would also feel recognized for living at a center, or middle, of the inhabited world. This is true historically; it's also true oceanographically. Every drop of ocean moving around the Mediterranean and its neighboring seas circulates within a place remote from the Poles and belonging to a hearth, a center. As we

revive the Nature that existed in this center before civilization, before urbanization and machines and fossil fuels and pollution, we can revive the savannah in what is now desert, and we can revive the seas as they had originally more-widely reached. The region is not in "crisis," as we hear all the time now; it's in a shift towards pre-neolithic, pre-classic revival. A guide to consult, written for North America but adaptable to North Africa and Arabia, is an MIT-trained engineer's book, "Water: A Natural History."

The design and cutting of channels between the sub-sealevel basins and the Sea has already been pioneered by US citizens. In digging a passage from the Gulf of Sirte, Libya to just west of the Nile Delta, Egypt, connecting six sub-sealevel troughs, one follows concepts from pioneers like Dennis Oppenheim and Michael Heizer to: cut narrow channels, in a multi-channel swath; cut from land to sea; start with the sub-sealevel basin nearest to the inlet coast; at the higher sills, blast a single broad trench; use aircraft and explosives; immediately as seawaters rush in, disperse spores for sea-plants; once a sabkha has filled up, use the weight of water there, plus incoming pressure of stream flow, to push water through the next partly blasted channels; excavate as well with earth-moving equipment. How we know this can work comes also from US citizens: a US corporation that used civil-satellite data to monitor the giant water-channel and lake constructions built by Iraq, with Russian engineering advice, in their war with Iran during the 1980s.

2.

Build up global ocean-algae industry.

Deploy structures in the coldwaters flowing away from the Arctic and Antarctic as holdfasts for wild, giant seaweeds, as giant carbon-absorbers, and harvest those seaweeds 24/7 to yield methane, hydrogen or even bioethanol fuel. Build up a renewable-fuel industry. Precisely this industry has been proposed by marine scientists at top institutions in France, Japan, Florida, California and Massachusetts; precisely this industry is being pioneered in South Korea, the Philippines and Indonesia; precisely this industry was recommended for Chile, with its huge Humboldt Current, the world's largest, by long-term ecology-conservative Dr. Gerald Boalch, at The Citadel, Plymouth Marine Sciences Consortium, UK. The oil companies, I grant, don't know quite how to get a property-control handle on this. They have a "strategic partnership" on one such scheme, to the extent of some exclusive process for converting giant seaweed into a bioethanol suitable for oil refineries. But we of the United States, a

nation of free enterprise, are not bound to the property-grip requirements of any established industry. We were not bound to whaling when petroleum came along, and we are not bound to petroleum when renewable hydrocarbons are in sight. Kodak has died, replaced by the smart-phone companies. Big Oil can die, or at least be reduced, replaced by renewable methane and hydrogen ventures. Maybe Big Oil can adapt and hang in there. Fine. But we of the planet and of the United States must economically and ecologically thrive. We cannot be waiting for changes from fossils to renewables according to profit-loss agendas in Houston.

Missing from the Houston calculations are the costs of unemployment—or, as cruel, meaningless employment. A macroalgae industry, set in seawaters and shallows full of wildlife, requires in-the-wild hand labor. While most energy industry today is capital intensive, creating manual-work jobs in short spurts, a renewable-energy industry based on waterplants would, for ecological reasons, be labor intensive. Many young people would be outdoors, learning ways to collect excess vegetation without harming the habitat of many species. Learning meshes with manual work; work for money becomes a healthful workout.

3.

Work in tandem with China, starting in the Northeast Seaboard.

Rather than worry about what China does on its coasts, start a coastal-industry program first imagined at Stony Brook, NY three decades ago. Even submarine shipyards can be used. And all can be within the physical context of river basins. Legal bodies exist: in 1961, for example, John F. Kennedy set up a Delaware Bay drainage basin program. And for the NY Bight, numerous basin-framed programs have been set up, like the Port Authority of New York and New Jersey, the Interstate Environment Commission, the Tri-State Planning Commission, the US Army Corps of Engineers department for NY Harbor. Simply broaden the existing administrations, integrating them into one, not unlike another basin-scheme of world reputation, the Tennessee Valley Authority.

Both the Delaware Bay and NY Bight hydrometric areas belong to a coast extending from Nova Scotia to Cape Hatteras, with a giant urban continuum extending from Boston to Washington, called Megalopolis by urbanists. Policy people often call this the Northeast Seaboard. But scientists can point out that this Northeast Seaboard physically includes much more. All the

seawaters that flow past the Northeast Seaboard, all the nutrients, sediments and fish/plant life in the sea, come from icemelt and cold ponds far north and west, in Greenland, Hudson's Bay and the Great Lakes. Vacationers know this because the sea is cold. Fishermen know this because the sea is abundant. The seawaters from the ice that melts in Greenland and Baffin Island, from all that from 1670 to 1866 was assigned to the Hudson's Bay Company, and from the Great Lakes and Gulf of St. Lawrence, and all these seawaters flow straight into a coastline from Cape Cod to Cape May, to bang against the coast, as we saw with Sandy, and to then, after the collision, descend into the canyons offshore and flow very slowly, very cold, under great compression, to the Weddell Sea, Antarctica, south of the Falklands. Here is a Home Sea of the US. A legal identity can be given, as in 1961 by JFK, to all of which drains into the seacoast extending from the Verazzano Straits to Cape May, as part of a larger bay, with New Jersey as the main wall.

In its collision with New Jersey's wall, the Labrador Current gouges in, as in Raritan, then slides south, as at the Highlands, and it dumps so much very-clean sediment that the US Army Corps of Engineers spends tens of millions dollars a year dredging it. What a waste.

In line with what US and China scientists conferred on and published over 30 years ago, under sponsorship of NY State Sea Grant Institute, I extend to New York, and to Connecticut and Rhode Island for Long Island Sound and its approaches, an organization of a information flowing in 24/7 about the No. 1 natural resource flowing in 24/7, the Labrador Current, so that there can be what the US-China conference recommended: massive deployment of "seaweed rafts" or other submerged structures to foster the growth of large brown, non-eutrophivating seaweeds which, in ecological community with free-roaming fish and free-attaching shellfish, can ABSORB into their tissues all those sediments that we now dredge. Then our people can fish and forage to collect the bounty. Not all people need go to college and learn how to work at a desk. Many, many people, even those with advanced degrees, can gain pleasure, exercise and meaning in life from going to the home sea and installing holdfast rigs or collecting the seaweed and fish so that the home sea, the NY Bight, is a source of ever-renewing wealth.

Because we are not alone on the planet, and because China will soon take the position from the United States of being Economy No. 1, we can bring China and its neighbors in on this action with the Labrador Current and invite them to a race, to do the

same, with as much or greater renewable-energy yield, in the second great current which flows out from Arctic waters: the Oyashio Current, flowing from the Western Arctic through the Bering Sea past Russia's Sea of Okhotsk, Japan and the Sea of Japan, with the China-Russia Amur River as influence, to encounter and dive deep, just off Tokyo, at the exact same parallel as that of our Labrador Current meeting the Gulfstream, with East Asia's warmwater current flowing towards California, the Kuroshio. China, Japan, Russia, even Korea can work together on their coldwater stream out of the Arctic just as we in the Northeast Seaboard, with end-stop in New Jersey, work on ours. Thus the US meets the demands now coming from China for a relation of partnership, of parity, of cooperation on vital issues like global warming. Thus the US is not just fretting about hacking and a loss of No. 1 dominance. We harvest our sediments flowing in from our home seas; they harvest theirs: both of us share knowledge in this ecology-vital task.

As a first step in such large-area policies, triggered by the need to organize and well-manage the billions of Federal dollars being earmarked for post-Sandy work, I aim for creation of more hydrometric-area agreements than the one created during the JFK administration in 1961. There can be a NY Bight hydrometric area, extending from Cape Cod to Cape May, and there can be a Gulf of Maine hydrometric area, extending by international treaty from Nova Scotia to Cape Cod, and there can be a Chesapeake Bay hydrometric area, extending from Delaware to Cape Hatteras. All these would together comprise the drainage, and huge ocean resource base, of the Northeast Seaboard. Nowadays, the coastal waters are in ecological crisis, overfished. This can change. It can change with administration within regions that reflect what physically occurs: flows from the mountains to the sea, past urban and industrial polluters; flows of seawaters from northwest to southwest, very clean and cold but now overfished. Legislation can be modeled on what the Irish did in 1959, in creating hydrometric areas as administration districts to assure coastal-water health. Legislation can be continued elsewhere in the US, building on existing interstate agreements for the Colorado River, expanded to be a Gulf of California hydrometric area, or the Great Lakes, situated already in a Gulf of St. Lawrence international-treaty hydrometric area, and the Columbia River or Klamath River river-basin administrations, consolidated in an Alaska Current area.

4.

Restore the rainforest, for national reasons.

The heartland of the United States, the Great Plains and Midwest, receives its weather, its masses of water, largely from the south. A sequence of satellite data from above the Equator shows where most of the masses of water get churned up: the jungles straddling the Equator. For the US and North America, these jungles lie in the basins of the Amazon and the Orinoco. The Amazon basin alone releases more freshwater into the ocean, and more clouds into the sky, than any other basin in the world by far: a factor of six. The next in volume is the basin of a now very-hotly contested river, the Congo: six times smaller. Near in rank is the Orinoco, also generating waters flowing north towards us in North America, so that we can conclude, if we think scientifically, that we in the United States are dependent on, or meteorologically part of, the Amazon-Orinoco rainforest. Without those being vigorous, we are doomed. And such is happening now. Those basins, especially the Amazon, are getting cleared and mined and dammed into ecological non-function, and we of North America degrade into drought and desertification as a result. Keeping the Amazon and Orinoco vigorous, as thick rainforest with free-flowing, undammed waters is a physical matter of national security for the US. If what happens now in Brazil continues, we lose our heartland and become as eroded and washed away as Central Asia. How do we reverse the present, very-rapid trends?

Exercise the Monroe Doctrine, with scientific reasons.

Although the Monroe Doctrine began with ambitions to keep Europeans out of the Americas, it can expand to a positive program: of keeping ecology throughout the Americas strong. For a migratory bird or butterfly, for many of our fish, even for migratory land animals like bison and tapirs, the Americas are a single habitat, with its own unique species. The ice melting from western Greenland flows to North America, the monarch butterflies in central Mexico migrate throughout North America, the birds of Brazil and Venezuela fly north seasonally to North America, and those of Peru fly to the west. We are interwoven.

5.

Scientific & technical exchange between comparable regions in the Eastern and Western Hemispheres.

The US State Department already has had regional exchange programs between an area in the US, of the Western Hemisphere, and an area in Eurasia/Africa, of the Eastern Hemisphere. So far, the regions have been river basins. They include a scientific-technology exchange, done comparatively, between the Mississippi-Missouri river basin and the Yangtze River Basin. Another program, more international, has been between the Rio Grande basin (both US and Mexico) and the Yellow River Basin.

The United Nations Environment Program started in 1974, and continues ever expanding, an environmental Regional Seas Program. Most of the regional seas of the world are included: the Arctic Ocean, the Caribbean, the Mediterranean, the Peru/Humboldt Current, the Persian/Arabian Gulf, the Red Sea, the Black Sea, the South China Sea and so on. But most of the regional seas of the US and Russia are not included. There is no regional sea program for Hudson's Bay, even though for 200 years that had an administration of its entire saltwater basin under the Hudson's Bay Company. There is no regional seas program for the Labrador Current, or California Current, or Alaska Current, or Gulf of Mexico and Gulfstream (Tidewater) coast. Countries around the Persian /Arabian Gulf, despite much political violence, meet to discuss the ecology and coastal development of the Gulf. No States of the US, nor its immediate neighbors, do this. This should change.

The scientific-technical exchange programs for the Mississippi-Missouri and Yangtze, plus the Rio Grande and Yellow River, can be incorporated in a UNEP Regional Sea defined exchange program between the Gulf of Mexico Basin and the East China/Yellow Sea Basins. Given the comparability of the Western Hemisphere with the Eastern Hemisphere, these now-existing UN Regional Seas programs can be paralleled with counterparts in the Americas.

Persian/Arabian Gulf	Gulf of California
Northeast Atlantic	Northeast Pacific (Pacific NW)
Kuroshio	Gulfstream
Canaries Current	California Current
Northwest Pacific	Labrador Current

The parallels are not exact. But working with them can keep us aware that no one is alone. If there's acid rain in the Gulf of St. Lawrence basin, it's probably also in the Amur River/Sea of Japan region of China and Russia. If there's serious loss of flow in the Colorado River into the Gulf of California, that occurs also with the one main river source for the Persian/Arabian Gulf, the Tigris-Euphrates. The loss of soil and water in the US Great Plains, high in the Gulf of Mexico Basin, occurs also in the highlands east of the East China Sea. We can see problems in common. We can exchange technological advances or insights to achieve solutions, in parallel, even competition. The Western Hemisphere is a half of the planet. Keep in mind the other half, and see how we can progress.

6.

De-desertification: structures to build up wallows and oases along migratory flyways, with meanders for mountain runoff.

In 1978, at the height of the American Earth Art movement, in which large, ecologically-responsive works were built in sites like Great Salt Lake, six earthworks projects were purchased by the Government of Iran to be constructed by the Iranian Army near Shiraz and the-then United Nations Environmental Park.

In 1991, the United Nations Correspondents Association organized a press conference, sponsored by the Turkish press corps, to discuss such projects and how they might relate to still-larger earthworks built by the Iraqi military in the Head of the Gulf in the 1980s, but destroyed by Iran.

In the 1991 press conference, the Iranian ambassador to the UN stood up and made clear that any sale of earthworks projects to Iran under the Shah was void, and any attempt to revive the projects, in front of the world public, amounted to "extortion."

That was then. As we know, the 1978 sale, by a German dealer of designs by US pioneer Dennis Oppenheim, became void at the start of 1979, with the expiration of the 25-year Consortium agreement set up when the Shah was put in power in 1953.

In 1994, acting on a co-copyright deal with Dennis Oppenheim, Peter Fend produced some 40 models of the same earthworks in various sites and various combinations, to produce a story-board of construction and expected ecological change. One set of

models is in Austria, the other set is in the UK. The co-copyright deal was made because Oppenheim despaired of ever getting the projects done. He had been condemned in the Western press for cooperating with the Shah, and he was forbidden to act in Iran after the Shah was deposed. The work became politically untouchable.

In late 1978, the same earthworks in model form, with many accompanying drawings and architectural details, had been flown by Iranian military jet from New Jersey to Iran. Soon after, cover stories in the art press appeared about them. They were intended to be a "next step" in the history of earth art, towards an ecologically-functional, terrain architecture. So, the contrast in status, from plans for execution by the Iranian military to plans for execution by no one at all, was a shock.

The sale price of the models was \$40,000 each, for a total of \$240,000. If they were to be tested and built by the military in Iran, the total budget would be much greater. The significance of the earthworks was meant to be global. Scientific testing of the models would occur, under Iranian supervision, so that intellectual property in whatever came to be built, if it worked and could be presented to the world, would belong to Iran as much as to the US.

Now, in 2013, there have been voices from inside Iran, from the cultural ministry, about those earthworks designed in 1978. The US Government could respond to those voices thus.

1. The earthworks proposed were meant to create micro-habitat for burrowing and other underground animals, for migrating birds, and for wallows-building animals.
2. The earthworks were meant to function ecologically. They were meant to function fairly much as any garden design is meant to function, sustainably.
3. The earthworks were to be built at any number of desert oases or wetlands sites, again and again, and with gradual improvement of design. All plans were quite sketchy, or "conceptual," subject to change on site and over time.
4. The earthworks were to be built along stops on north-south flyways of migratory birds, butterflies or insects. These animals were seen as major transporters of nutrients, especially micro-nutrients, and creators of the micro-habitat necessary to soil and muck.

5. The earthworks need to be built and tested for us to know what they can do. In 2012, two University of Aberdeen professors offered to keep more complex models of the works in combination, set in arid terrain near salt flats, as produced by Peter Fend, so that the University of Aberdeen could cooperate with Peter Fend, in his co-copyright contract with the Studio of Dennis Oppenheim, on finding out just how such earthworks as proposed could function in a desert environment like that of Iran, and Afghanistan, with their ca. 20 salt-lake basins.
6. In July 2013, the Economist runs a cover story, can Iran be stopped from developing nuclear weapons?, and nowhere in this historical unfolding appears an account about earthworks to be trialed with the intention of restoring migratory-animal habitat and wetlands near salt lakes. We know only of what Iran is supposed to not do, and nothing of what Iran, under another regime, was supposed to do.

Here are the actions to take in Iran, conscious of its drought.

1'. Tell Iran through channels that the US knows about the earthworks models, the intended construction of earthworks and intended ecological benefit, including similar structures along a flyway from south of Iran to well north of Iran. Tell Iran through channels that it would like to cooperate, or at least communicate, on this project from 1978. Tell Iran through channels that it would like to continue with this project from 1978, either on its own and with the University of Aberdeen, or in an acceptable liaison or communication with them.

2'. Tell the world press about the situation to date.

3'. Acknowledge that the Shah also wanted nuclear weapons, thinking that Iran could become a Great Power, so that no matter what regime Iran has there will be ambition for importance.

4'. Make ecological development of desertified lands a primary aim of US policy in the arid world, whether Arabian or Persian or Central Asian.

5'. Adopt such a stance without mention of anything nuclear. Brow-beating doesn't work.

6'. Test the works in the United States, so that we can with scientific knowledge proceed, or not, on this overture from 1978. (This could be done with the University of Aberdeen too.)

7.

Export technology with an expectation that it will be copied:
India.

The US has gained a reputation for inaction. A NY Times article on Secretary of State John Kerry in Syria (July 19, 2013) quotes a refugee-crisis official, "We are not satisfied with the American answers... We just need an action. We always hear words." The subject here is Syria, but it could be anywhere else. Rather than take a lead, rather than transfer what it knows gladly, rather than start projects that create jobs and end misery, the United States tip-toes around about terrorism, security, threats from China or the Taliban, and occasionally throws some weapons around—as in Libya—in betrayal of agreements made only a few years before. The US strides nowhere. It's always guarded, awaiting attack.

To kick this habit, the US must speak not of democracy, not of genocide, not of nuclear weapons or chemical weapons or any other WMD, not of no-fly zones and energy security, but of the Planet's need for ecological vigor. The US must shift from being the soldier, besieged, to being a scientist, finding out technical solutions to practical problems and then teaching them.

A place to begin, where there's no serious enmity, but where the economic and ecological situation remains fragile, is India.

The Indian sub-continent must not, for the sake of the Planet, increase its use of fossil fuels. It should, rather, reduce its use of fossil fuels. It wants economic growth, but that—for the sake of the Planet—must be with non-fossil sources, renewable sources.

Begin by observing the scientific fact that the Ocean named after India, the Indian Ocean, has no connection with the Arctic, and has saltwaters that almost entirely have spun off from Antarctica. The Indian Ocean is an extension of the Southern Ocean that surrounds Antarctica. Freshwaters flowing into the Indian Ocean come mostly from glaciers and snow, ice or rain in the world's highest mountains, the Himalayas. The influence from other sources, like the Limpopo River, is less.

Into this outspay from Antarctica, with 24/7 inflow of cold, nutrient-laden saltwaters, flows a very rich stream of sunlight. Conditions are supreme for growth of vast fields, all wild, of macroalgae, along with fish and shellfish. Seas are relatively calm. Enthusiastic workers can easily be found. All the people, for centuries accustomed to local economy and community self-

reliance, can build up an Ocean Industry for Local Methane or Hydrogen, plus Fish and Shellfish, very fast, and on giant scale, with no geopolitical complications.

India and its Muslim neighbors, Pakistan and Bangladesh, have been converting from benzene to methane, or CNG, for transport. It does this for air quality. It does this also in line with the Russian decision to make CNG the transport standard. And it can do so along its very long coasts, extending to the whole north coast of the Indian Ocean, from Oman and Pakistan to Burma and Thailand. A first all-methane economy can start in an island at the west end of the Ocean, 24/7 getting cold waters from Antarctica under a hot, near-Equator sun, named Socotra.

The US, in its race with Iran and with Russia, has low-cost sold nuclear technology to India.

Now the US, in its race with China and as a surprise for Iran and Russia, can low-cost sell seaweed-to-gas technology to India. The US can extend this with gas to electricity. No one can afford to have India increase fossil-fuel use. What the US provides would be developed by the US and useful inside the US, and profitable for the US in some other parts of the world, like Chile, but in India it can be free.

Along with that, the US can build on the great tradition of household industry in the spinning wheel, a tradition honored in its national flag, and can give to India as much know-how as it gathers of the Poncelet-Duchamp lightweight bicycle-fork mounted waterwheel. Electricity can become local, in every community with running freshwater. The US need only consult the Poncelet-design waterwheel company in the US, perhaps prod General Electric Aircraft Engines to follow suit, and then export the equipment to India with an expectation that they will copy it. Fine.

The diplomatic and ecological payback would be huge. We'd put Antarctica at the center of the world map, as Nature says. We'd give India a strong boost into post-petroleum economy, on a trajectory they already adopt, but with new techniques. We'd give the poor in India plenty of meaningful work, much of it on local and community scale. We'd build an alliance with India that balances against the tension with China, or the rivalry from Brazil, or the arms deals from Russia. We'd be honoring the capacity of a country talented in mathematics and science to prove itself. And we'd take an "action", rather than just "words", that immediately solves No. 1 questions of environmentally-sound energy supply.

8.

Building on the plans proposed for China and India, and the reference to Brazil for protecting the Amazon, establish a BRIC-oriented global-development policy, thus incorporating a natural counterpart, if not adversary: Russia. There are many ways in which to cooperate with Russia:

--continue research on architectural innovations started by the Constructivists (as Matta-Clark attempted with "Sky-Hook");

--set up local-river algae industry and methane fuel or electricity production, first with the river mouths or basins very, very far--and very hard to supply with fuel;

--campaign for infrastructure to supply methane as CNG, electricity or even hydrogen to any transport vehicle; follow up on Russia's decision to make methane (including biometha) the main fuel;

-construct submarines for macroalgae harvest, or even for "harvest" of sea-borne plastics;

-design circulatory diagrams for the economy based on Russian-born economist Vasily Leontief;

-dialogue about continuing the earthworks built in the Iran-Iraq war zone, possibly with concepts from US earth artists.

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