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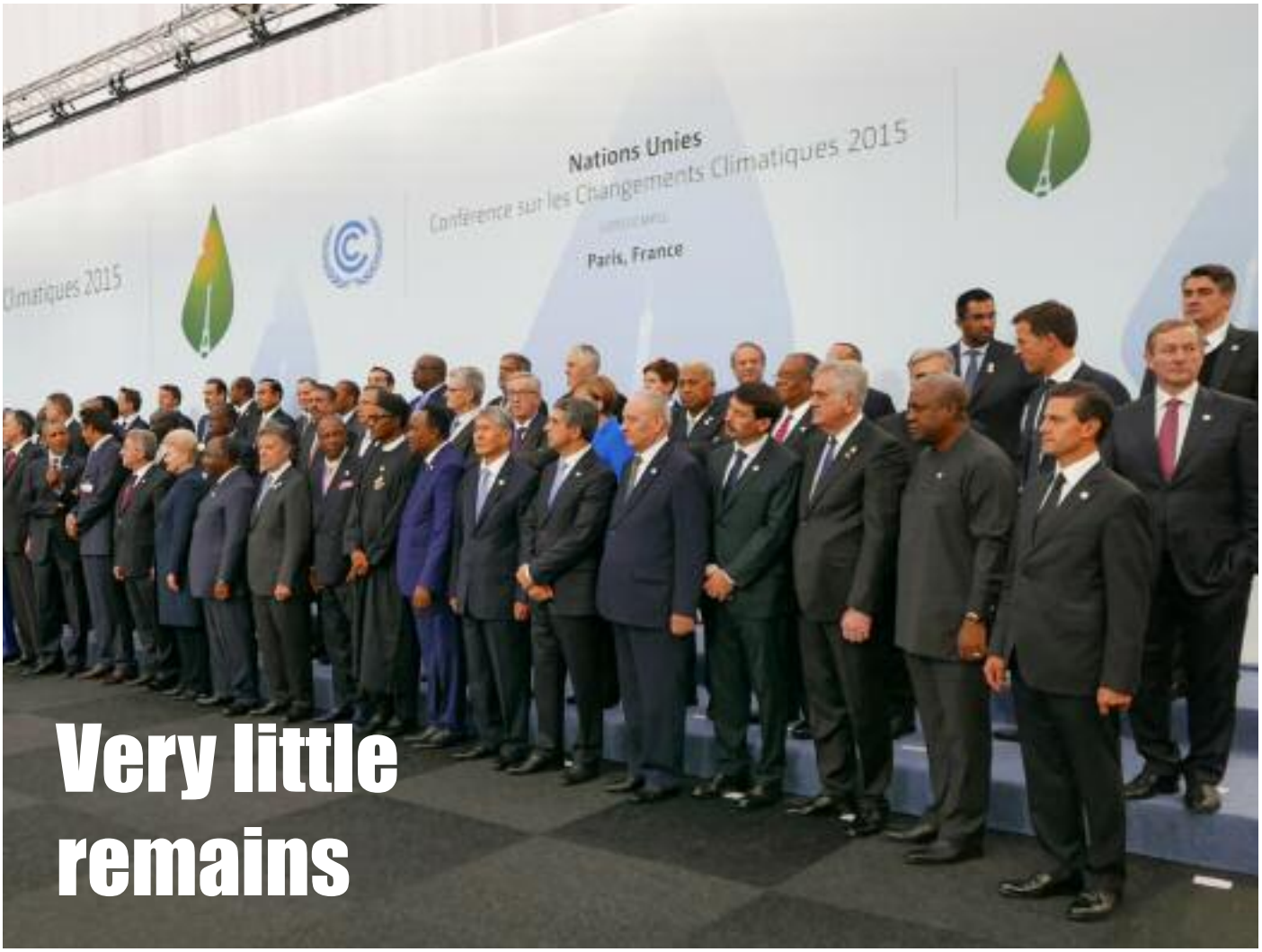
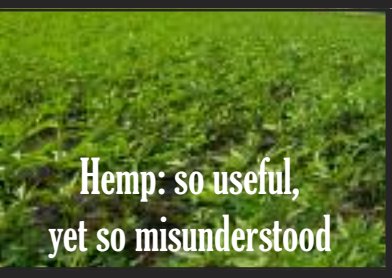


Very little remains



Hemp: so useful, yet so misunderstood

Argentina's Never-ending Environmental Disaster

Rural Alaska lessons about renewable energy

Urbanisation can be good for the environment

YEAR III - NUMBER 2 - APRIL-JUNE 2017

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Only Natural Energy

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APRIL-JUNE 2017

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Very little remains

President Trump has not only put funding for the GCF on the chopping block, but is seeking to axe funds to the United Nations climate body (UNFCCC) and contributions to the UN's climate science panel (IPCC).

By JEZ ABBOTT

ONE

Three days before leaving the White House President Barack Obama sent $500 million to the Green Climate Fund. Then came Donald Trump, and that could be the last cheque to the fund from the US. Trump has dismissed climate change as a "Chinese hoax", but consternation has gone beyond China. In mid-April not just Beijing, but leaders of Brazil, India and South Africa met and urged industrialised countries such as the USA to honour financial commitments made at the Paris Agreement in 2015. The Green Climate Fund (GLF) was central to that agreement.

Developed countries pledged to pump more cash into the fund, designed to help poorer, climate-vulnerable countries adopt clean-energy technologies. The aim is to raise $100 billion and the recent meeting of climate change ministers from the bloc of four – who represent the biggest emerging economies - ended with each one calling on rich countries to honour their financial commitments.

South Africa's deputy environment minister Barbara Thompson, for example, said after the April meeting that recent US policy changes were a "major concern", as well she might. Trump, who questions the scientific basis of global warming, last month confirmed his plan to end to payments to the GCF and signed an order to undo climate change regulations introduced by his predecessor.

Instead, he wants to increase defence spending by $54 billion to be funded through cuts to government agencies and initiatives. The White House has released few details beyond the top-line defence figure, but Union of Concerned Scientists director of strategy and policy Alden Meyer says said it's a "reasonable long-term assumption" that Trump will release no more money to the GCF.

The Green Climate Fund was set up to advance the goal of keeping the temperature increase on our planet below 2 degrees Celsius. It was established by 194 governments to limit or reduce greenhouse gas emissions in developing countries, and to help adapt vulnerable societies to the unavoidable impacts of climate change.

Trump has not only put funding for the GCF on the chopping block, but is seeking to axe funds to the UN climate body (UNFCCC) and contributions to the UN's climate science panel (IPCC).

Despite this noble cause Natural Resources Defense Council (NRDC) director Jake Schmidt agrees with Meyer, and assumes anything marked climate change will "be under a bullseye". Like all budget measures, the cuts will

President Barack Obama at the United Nations General Assembly Climate Summit 2014.
(Official White House Photo by Lawrence Jackson)

have to pass through Congress and may face challenges and amendments. Those cuts are set to run wide and deep.

Trump has not only put funding for the GCF on the chopping block, but is seeking to axe funds to the UN climate body (UNFCCC) and contributions to the UN's climate science panel (IPCC). Trump's budget director Mick Mulvaney confirmed what everyone already knows recently, telling a reporter the president considers spending on climate change programmes a "waste of money".

An end to financial support for the Green Climate Fund could effectively remove the US from the Paris Agreement, seen as a major accomplishment by the Obama administration and the nearly 200 other nations, that was years in the making. That has rattled many of those 200 or so other signatories as well as environmentalists.

Yet Trump not only blusters about climate change, he continually stalls and hedges: a key decision on whether the US should stay in the Paris climate deal, due in April, was shelved until a later date. Policy experts insist Trump stands virtually alone in going against the grain. Though the Paris Agreement is non-binding, nearly every country in the world has signed up to reduce emissions.

Even Trump advisers like Secretary of state Rex Tillerson are said to have warned of a diplomatic backlash if America pulls out of the Paris Agreement, which reinforced the goal contain global warming to less than 2 degrees Celsius above pre-industrial-age levels. Meanwhile, several coal and oil firms have urged Trump to stay in the voluntary treaty and try to shape climate talks from within.

America's biggest oil company ExxonMobil, for example, told the White House in March it believed the Paris agreement was an "effective framework for addressing the risks of climate change" and the US Should remain a party to it. Exxon is currently being

investigated for allegedly misleading the public and shareholders about what it knew about the dangers of climate change.

Other big-name corporations such as Unilever and even Monsanto, have bought into the agreement. Monsanto, the multinational titan of genetically engineered food and no lover of environmentalists, has plans on reducing emissions and is set to be carbon neutral by 2021. All have publicly accepted something Trump has not: that doing nothing on climate change is bad for the globe and business.

Meanwhile, the world waits. Laurence Tubiana, one of the architects of the historic Paris climate deal who now heads the European Climate Foundation, warns the US administration's wholesale cuts to climate programmes and research will undermine efforts across the world to protect people from the effects of climate change. He also says the US "will not be truthful to its commitments".

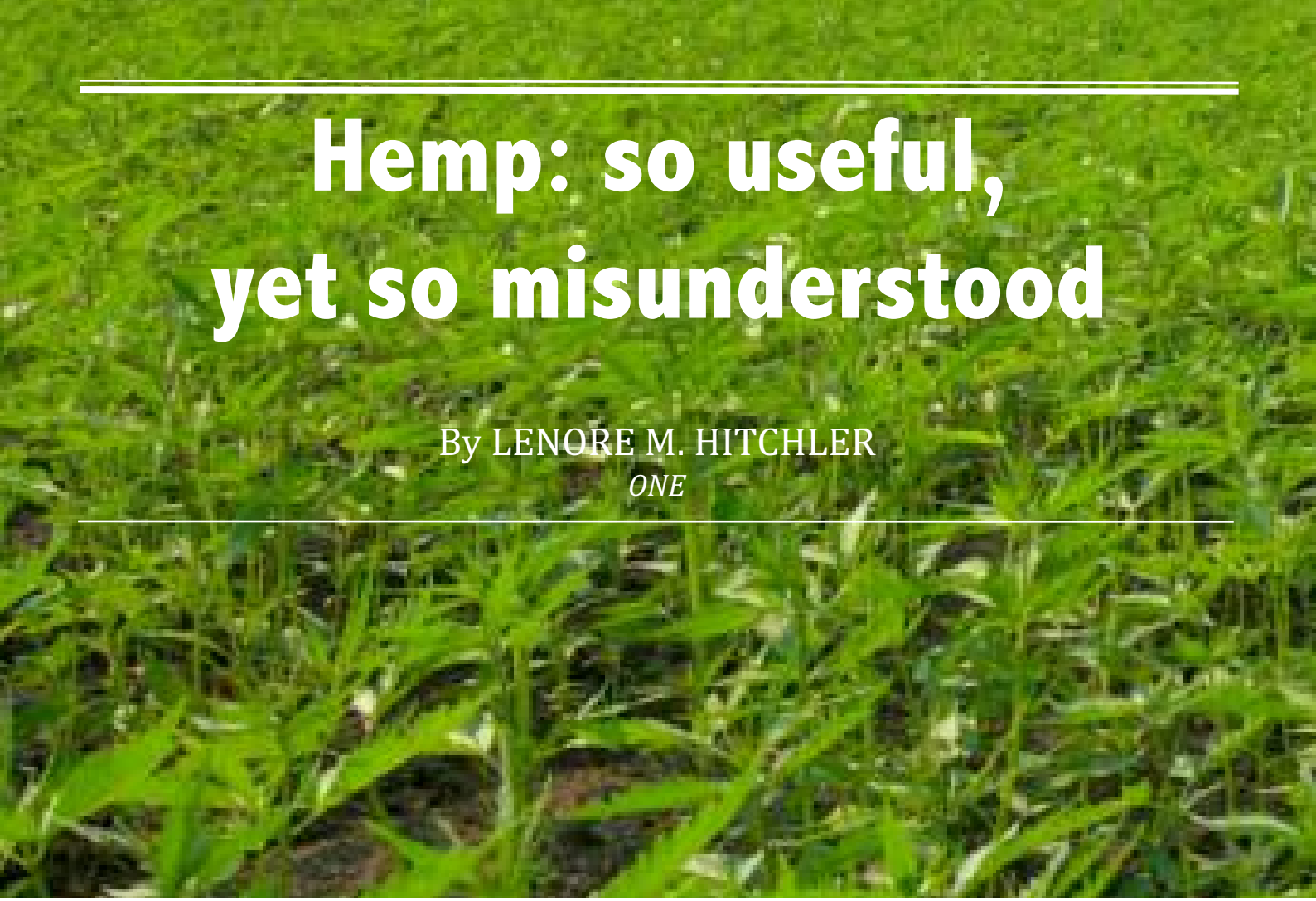
Also latching on to credibility and the theme of truth is Chai Qimin. The international climate cooperation expert at China's National Development and Reform Commission says a "lack of trust" on the US policy line on the environment is already undermining economic transition inside the world's biggest carbon polluter.

But if Trump's track record spells danger for the environment, his track record in turning policy into law could also be a lifeline, explains Greenpeace USA executive director Annie Leonard. She insists Trump's attempt to undo climate protection will be "vigorously" challenged in court, and to date, courts have thwarted Trump on key areas such as migration of Muslims. "Given the administration's recent track record, that gives us hope this rollback of environmental policies would not stand," she explains. "Justice will ensure these laws continue to protect the environment and the vulnerable communities most affected by climate change."

Trump may also have met his match in Greenpeace campaigner Travis Nichols, who is no less strident in views or belief in eventual victory: "Trump isn't a leader, he's a fossil-fuel industry stooge with a presidential pen. Thankfully, for all his bluster, the best Trump can do is delay America's inevitable transition to clean energy, but he can't stop it: its momentum is too great." DNE

US President Donald Trump. Photo Credit: Gage Skidmore


WORLD WATER DAY
WATERWORKS



Hemp: so useful, yet so misunderstood

By LENORE M. HITCHLER
ONE

Do you sock it to the planet with your socks? It is estimated that in the United States four billion pairs of socks are purchased each year. The production, distribution, and disposal of these socks produce a large volume of greenhouse gases and therefore contribute to global climate change. And socks represent just a small portion of the clothing that we wear.

In addition to socks, the production, use, and disposal of all clothing contribute significantly to global warming. This was shown in the first article in the series that explores the relation between clothing and climate change. Textiles account for ten percent of the world's total carbon dioxide (CO2) production. According to the US Energy Information Administration, the textile industry is the fifth largest producer of carbon dioxide in the United States. The use of textiles was responsible for about one ton of the 19.8 tons of the total emissions produced by each American in 2006.

Since petroleum is one of the components of polyester, it is obvious that the manufacturing of polyester fabrics especially contributes to global warming. Nearly 70 million barrels of oil are used globally each year to produce polyester.

Along with polyester, the production, use, and disposal of cotton also produce greenhouse gases. Cotton use contributes between 0.3 and 1% of total annual global greenhouse gases. Ten percent of the world's fertilizers are used on the cotton crop, and petroleum is one of the ingredients in nitrogen fertilizers. Additionally, the production of one ton of fertilizer uses around 33,000 cubic feet of natural gas. Since fracking is one of the sources of natural gas, growing cotton with synthetic fertilizer contributes to the use of fracking. Moreover, petroleum is also an ingredient of pesticides, and the cotton crop uses 25% of the world's insecticides.

Fortunately, there is a natural alternative to polyester and cotton that is much better for the environment in general and will help slow down global climate change in particular. Hemp is that solution. In a report from 2005, the Stockholm Environment Insti-

tute found that hemp, compared to cotton and polyester, has the lowest ecological footprint. Of course, there are other fiber substitutes, but there are so many advantages to hemp that an article exclusively dedicated to the plant is warranted.

This article includes many statistics from the United States. However, since the country is so dominant in the globe, if it moves toward the use of hemp fiber it is probable that the rest of the planet will soon follow.

Growing hemp is much better for the environment and the prevention of greenhouse gases. One advantage of hemp is that it can be built almost anywhere, as opposed to cotton, which can only be grown in warmer climates. Cotton crops require temperatures ranging from sixty to ninety degrees Fahrenheit for six to seven months. In contrast, hemp requires temperatures of sixty to eighty degrees Fahrenheit for a much shorter growing season of approximately four months. The shorter the growing season, the less amount of fossil fuels are used during the production of the crop, both for raw materials and the use of farm equipment.

A map published by the US Department of Agriculture shows that hemp can be grown in some part of every state in the continental United States, except Arizona and Florida. In fact, hemp can be grown in the entire area of the majority of states. In warmer regions of the world, including Southern California, Texas and Florida in the United States, hemp could be harvested twice a year.

Unlike cotton, the hemp crop does not need herbicides. A reasonable stand of 200 to 300 plants per square meter suppresses the growth of weeds. Hemp does not require large quantities of fertilizer, and it can be grown organically very quickly. After all, it is called a weed. The root system descends for three feet or more and helps build and aerate the soil, and anchors and protects it from erosion. By contrast, cotton

exhausts and depletes the soil, thus requiring heavy applications of fertilizer.

Hemp is also more productive than cotton. Since hemp plants reach heights of up to fifteen feet, it is estimated that one acre of hemp will produce as much fiber as two to three acres of cotton. Because hemp has greater yields than cotton, fewer fossil fuels will be used per ton of fabric. An additional benefit of raising hemp is that besides providing fiber used in clothing, other parts of the plant can be put to many other uses, as opposed to cotton, which is only valuable for the cotton bolls themselves.

The book Design for Sustainability by Janis Birkeland contains a quote from Henry Ford regarding hemp. Ford asked the rhetorical question: "Why use up the forests which were centuries in the making and the mines which required ages to lay down, if we can get the equivalent of forest and mineral products in the annual growth of the hemp fields?" The woody core can be used for building material, industrial products, and paper. The seeds can be used for their strong nutritional value and oil made from the seeds can be used for foods, body care, and products such as paints. It is estimated that an acre of hemp can produce 300 gallons of oil, three tons of protein and 30 tons of fiber per year.

The hemp crop uses much less water than cotton thus cutting down on the need for irrigation. In dry areas, drought resistant varieties of hemp can be grown. Irrigation is powered by electricity which is usually produced using fossil fuels. The World Wildlife Fund states that 73% of the global cotton harvest is irrigated. Because hemp would not need to be irrigated, growing hemp would cut down a number of greenhouse gases. Besides using fewer fossil fuels, growing hemp will actually remove some CO2 from the environment. Hemp Global Solutions calculated that the growth of each ton of hemp can absorb 1.63 tons of CO2. It is estimated that a hectare of hemp contains nearly ten times as much CO2 as a hectare of pine trees.

All of the processes in the manufacturing of fabric use great amounts of fossil fuels. For example, the process of dyeing fabric is energy intensive, and a lot of toxic chemicals pollute the environment during the process. Hemp can be grown to produce white, brown, green, gray, and black colored fiber thus cutting down on the use of noxious dyes. It is also relatively easy to dye hemp other colors.

Since hemp is more durable than cotton, consumers will not need to purchase as many articles of clothing thus leading to a reduction of greenhouse gases. Cotton fibers break down over time and the more it is washed, the more that it breaks down. Hemp fabric doesn't break down as fast, and it softens over time. Hemp has many other characteristics which make it a better choice than cotton for the consumer. Hemp is breathable and wicks moisture away thus making it much more comfortable than other fabrics in the heat of summer. It also has anti-bacterial properties. Hemp is resistant to rotting, mold, and mildew, and it also withstands ultraviolet radiation.

Hemp is a potential remedy for the prevention of greenhouse gases as well as the mitigation of the harmful effects of global climate change

The disposal of clothing contributes to the environmental burden on the planet. It is estimated that polyester clothing made from fossil fuels can take 1,000 years to decompose. In contrast, products solely made from hemp are biodegradable, can be composted, and are recyclable.
Raising hemp will contribute to the economic health of the countries that grow it. Growing hemp has the potential to change the balance of trade between countries. The US imports more textiles than any other product. In 1989, textile imports accounted for 21% of the US merchandise trade deficit, and the US currently imports even more textiles. Growing hemp will add to the gross national product thus providing more income which could be spent on producing solar energy or mitigating the effects of climate

change. Hemp has the advantage of having been raised and used for textiles for a long period. This means that humanity knows how to grow it, and we already know that it can be successfully used to produce textiles. The Columbia History of the World states that fragments of hemp fabric dating back to approximately 8000 B.C. were found in tombs. It is probable that hemp could have been woven into fabric before that but would have decomposed by now. By the 27th century B.C. the Chinese raised hemp for fiber. The word for canvas in many languages comes from the word for cannabis. Around 450 B.C., Herodotus wrote that hemp "is extremely similar to flax [the source for linen fabric]. Hemp, however, is greatly superior to flax, since it springs self-sown. The Thracians manufacture, from this plant, garments which equal even those of linen: nor can any one, not very conversant in these matters, distinguish whether the garment is made of hemp or flax; while he who has never before seen hemp articles takes them to be linen."

The use of hemp was necessary in early transportation throughout the world. From at least the fifth century B.C., until around the late 1800s, ninety percent of all ship's sails were made from hemp. Ships from the sixteenth to the nineteenth centuries had fifty to one hundred tons of hemp rigging each. Hemp was also used by the pioneers in the settling of the United States. Prairie schooners were covered wagons used by nineteenth-century pioneers crossing North American prairies. Conestoga wagons were horse-drawn freight wagons that carried farm products to cities and goods from cities to rural communities. They look like large prairie schooners. Both of these vehicles featured canvas tops made of hemp.

Thus, hemp has a long history of use as a fiber in the United States. The website for Colonial Williamsburg stated that the Virginia Assembly in 1632 ordered "that every planter as soone as he may, provide seede of flaxe and hempe and sowe the same." According to the LA Times, refusal to grow hemp during the 17th and 18th centuries was against the law. Another source stated that 17th century farmers in Virginia, Massachusetts and Connecticut were ordered by law to grow Indian hemp. Indian hemp was an indigenous species known to Native Americans. Between 1763-1769 in Virginia, farmers could actually be jailed for refusing to grow hemp. Soldiers in the Revolutionary forces wore clothing made from hemp.

Early American presidents raised hemp crops. According to the Mount Vernon Website, George Washington grew hemp at Mount Vernon. In a letter to William Pearce on February 24, 1794, Washington advised the following regarding Sainfoin seed and India Hemp: "Make the most you can of both." Thomas Jefferson also grew hemp, and he stated that "Hemp is of the first necessity to the wealth and protection of the country." Jefferson went on to state that hemp "is abundantly productive and will grow forever on the same spot" as opposed to tobacco which depletes the soil of nutrients. President John Adams also raised hemp.

Hemp continued to be a major crop into relatively modern times. For over 200 years taxes could be paid with hemp. The 1850 US census documented that there were approximately 8,327 hemp plantations of at least 2000 acres each. Until the 1880s, eighty percent of all textiles, including fabrics used for clothing, bed sheets, towels, diapers, etc. were made from hemp. Both the 1893-1910 editions of the Encyclopedia Britannica and the article in Popular Mechanics in 1938 estimated that at least half of all the material that has been called linen was not made from flax but was actually made from hemp.

In the past, the American government has outlawed the domestic production of hemp. However, hemp does not contain the chemical substance that produces a pharmaceutical high. This fact should eliminate the impediments to making hemp a legal crop. Thus, hemp is a potential remedy for the prevention of greenhouse gases as well as the mitigation of the harmful effects of global climate change. Therefore, it is possible to stop socking it to the planet with our socks. ONE

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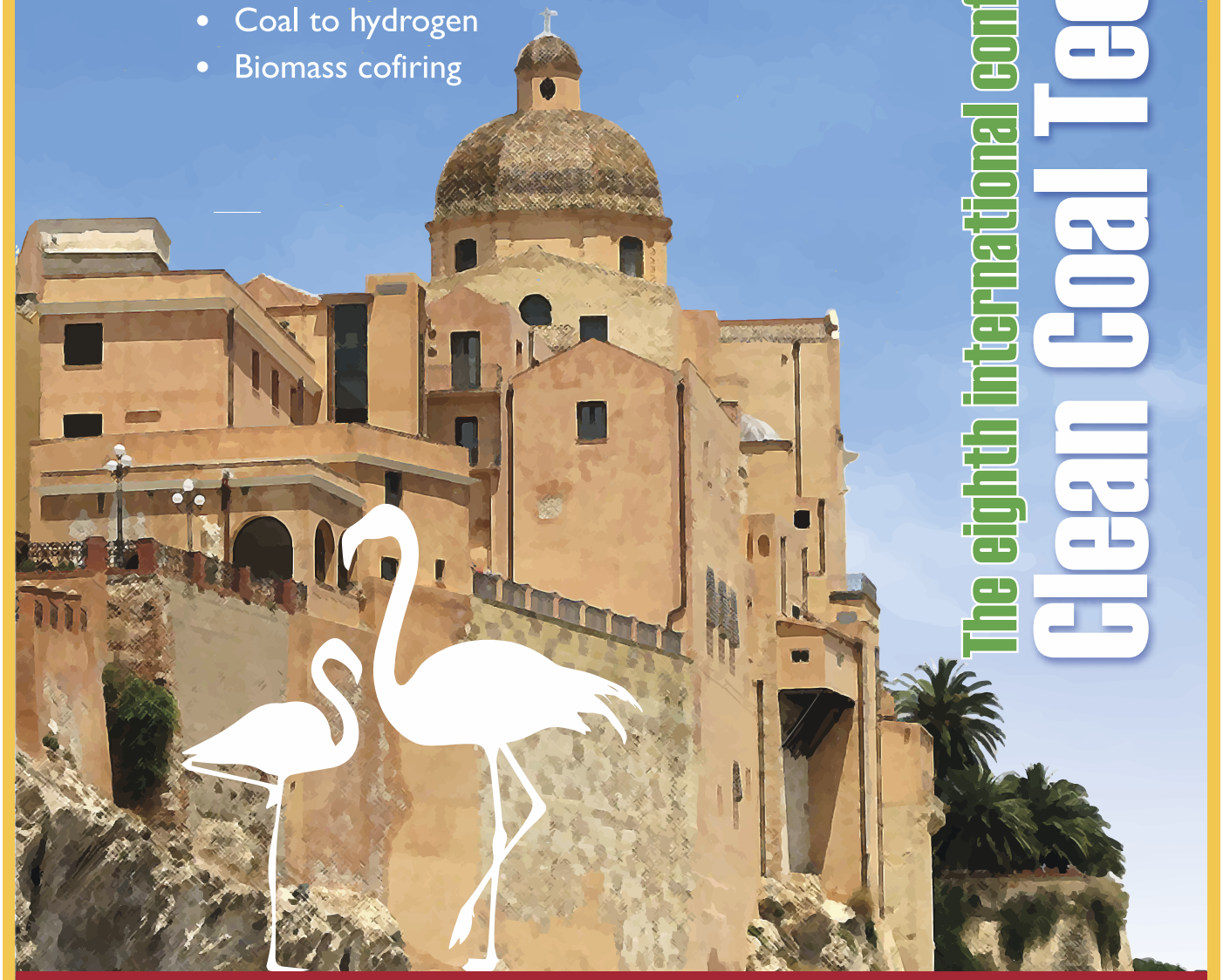

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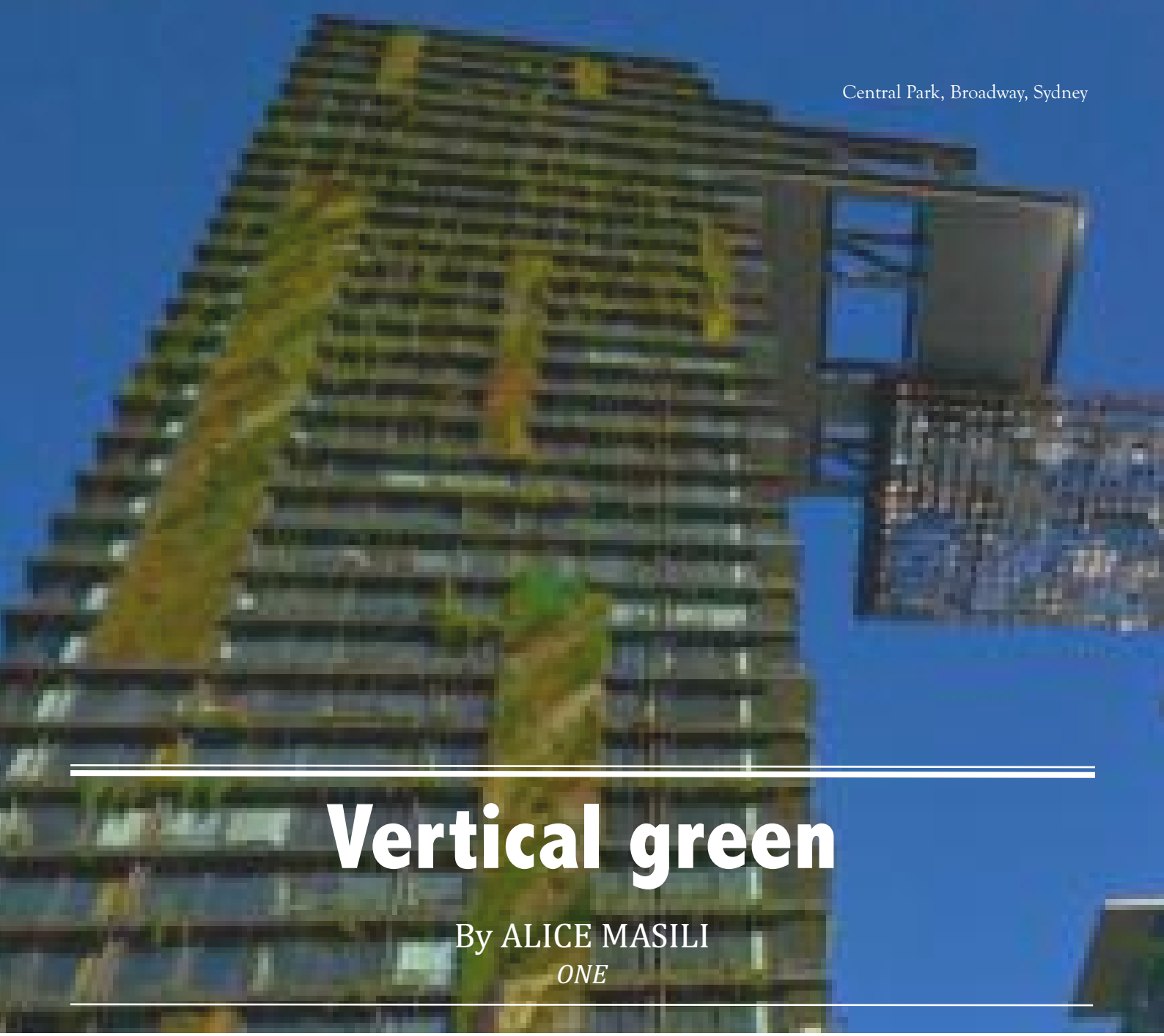

Central Park, Broadway, Sydney

Vertical green

By ALICE MASILI
ONE

Have you ever thought of building a green roof or a vertical garden for your house? After this article, you will start thinking about it, or at least, you will desire to have more plants in your home.

Buildings usually take away land from nature. But they can also be an opportunity to increase the urban green. Since ancient times we have seen examples of plants and building coexistence and, in the last few years, we found new ways to experience this double take.

Vegetation has become an integral part of the buildings. From hanging gardens to more or less sloping green roofs, it is possible to make the construction greener through the reduction of the environmental impact and the improvement of the space. It could be a sort of antidote to the constant worsening of the environmental quality in big towns.

If it is unthinkable to curb the extensive land use and the urban development, arguably the only solution to exploit the spaces still available is to build facades and roofs to recreate natural habitats. But are they really "green"?

Here there are some examples of the most beautiful urban gardens in the world:

Singapore, Gardens By The Bay, Supertrees, Colorful

The Gardens by the Bay - a big park with three waterfront gardens. Fashioned to become an eco-friendly attraction, it is part of the strategy by Singapore Government to improve the quality of life.

Vertical Forest apartment building in Milan

Bosco Verticale (Vertical Forest) - a complex of two skyscrapers in Milan, is considered the world most beautiful vertical garden. Designed by Borei Studio, the vertical forest opened in 2014 and, in the same year, it won the International Highrise Award.

The vertical Garden of Musèe du Quai Branly, Paris

The vertical garden of Quai Branly, the Museum of Anthropology in Paris cannot be forgotten. The garden is designed by Patrick Blanc and occupies an entire facade of the building. About 800 square mt, it houses 15,000 plants of 150 different species from around the world.

Universidad del Claustro de Sor Juana, Mexico City

Mexico City is one of the most polluted capitals in the world. Several vertical gardens have been installed to solve this problem. One of these is the Green Wall of the Universidad del Claustro de Sor Juana, close to the city centre. Its peculiarities are a bike positioned at the top of the vertical garden wall and the intricate designs that plants make up.

The advantages of vertical gardens and green roofs may go well beyond the decorative aspect. Both allow achieving excellent levels of thermal insulation during winter and summer, reducing the use of air conditioning in summer and providing a suitable protection during winter. They also bring a significant reduction of conditioning and heating costs and an energy saving.

Besides, plants protect exterior walls and roofs from exposure to UV rays, rain and, temperature variations, making them three times more durable. This is a huge saving in economic terms.

The installation of a green roof and or a vertical garden can reduce by 23% the energy consumption for heating and by 75% the energy consumption for air conditioning. Plants can fend off most of the heat and contribute to the lowering of the temperature.

The plants also release moisture, thus cooling the air. They contribute to a decrease in the levels of CO2 in the air and the reduction of global warming, as well as help to capture fine particles that pollute cities, improving air quality.

Plants absorb the most persistent and insidious pollutant, such as formaldehyde, often nested in resins of wood or household disinfectants, providing a significant contribution to the health of its inhabitants. The presence of green promotes recovery from stress, and all the inhabitants of the building can enjoy such beneficial effect.

The right combination of soil, plants, and air contribute to achieving an optimum level of insulation, a barrier against the typical noise of cities. In fact, they can capture and reflect the sound waves. The substrate lock lower sound waves, while plants retain the higher frequencies.

Green roof and vertical garden ideas come from the increasing need to create spaces of vegetation in cities. The most obvious advantage is to regain space where it looks impossible. With no usable land left by the buildings, there is an incredible variety of plants, which can well expand skyward.

The beauty of a flower garden is undeniable. Green roofs and vertical gardens are not just aesthetically nice items; they are good for health, by reducing the carbon dioxide from the air, and positively influence mood and stimulate the sense of wellbeing and relaxation.

It's not only about beauty; it's more about being practical: it is possible to install greenhouses and small urban gardens, to let them grow with buildings.

Vertical roofs can be an attractive solution to (re)cover abandoned buildings or peripheral buildings. Furthermore, they improve the aesthetic and visual impact of the house with a consequent rise in its real estate value.

Unfortunately, all that glitters is not gold. First, it is important to know if our building, or roof, could support the weight of layers and plants chosen to create our beautiful lush garden. In fact, a green cover could weight from 20 to 2000 kg per sq. Furthermore, flowers, small shrubs, and plants, in general, require high-maintenance and subsequent artificial irrigation to maintenance.

In addition to the manufacturing costs, you have to consider the additional ones for its support and care. To pick succulent plants, which require less care and maintenance, could be an easy way to have evergreen and lush palaces. The importance of the waterproof system should not be underestimated. At the base of an actual realization, there is the waterproof layer, which must guarantee maximum hold, functionality, and durability; otherwise, all efforts will be frustrated by problems of infiltration.

Although expensive, to add green to any city centre should be a standard target. More: a tool to improve our wellness and an enjoyable way to create opportunities of sociability, to build partnerships and to educate. ONE

Argentina's Never-ending Environmental Disaster

By DANIEL GUTMAN

Ipsnews.net

Is it possible to spend 5.2 billion dollars to clean up a river which is just 64-km-long and get practically no results? Argentina is showing that it is.

As the government admitted to the Supreme Court of Justice in late 2016, that is the amount of public funds earmarked since July 2008 for the clean-up of the 64-km Matanzas-Riachuelo river, which has been identified as one of the worst cases of industrial pollution in the world.

The river cuts across 14 municipalities as it runs from the western Buenos Aires working-class suburb of La Matanza to the picturesque neighbourhood of La Boca, where it flows into the Río de la Plata or River Plate.

However, the situation remains practically unchanged since the mid-19th century, when chronicles of the time described the "rotten" state of the river. Today an estimated eight million people live in the river basin, facing a serious health and environmental emergency.

"The Riachuelo river is still serving the function of drainage for the economic and human activities in the city of Buenos Aires and a large part of the Greater Buenos Aires, as it has for the last 200 years," says a more than 200 page report seen by IPS, which the Matanza Riachuelo Basin Authority (Acumar), the official body in charge of the clean-up, submitted to the Supreme Court on Nov. 30, 2016.

"It's not just highly polluted, but it continues to be contaminated," said the document, which added that 90,000 tons per year of heavy metals and other harmful substances are currently dumped into the river..

In the Spanish colonial era, sheep and mule meat salting factories were built along its banks, along with tanneries that processed cow leather. Dumping waste into the river became a common practice that turned it into a veritable open sewer, which continued with more modern industries like petrochemical plants and the meat-packing industry.

In the last few decades, official promises to clean up the Riachuelo have abounded. The one perhaps best remembered by Argentines was made by María Julia Alsogaray, environment minister under then President Carlos Menem (1989-1999), who announced that they would do it in just 1,000 days. An enthusiastic Menem said that when they were finished, he would swim in the Riachuelo. In the end, the river remained a health threat, Menem decided not to swim, to protect his health, and Alsogaray ended up in prison for corruption.

It seemed that this story could begin to change in July 2008. Or that was what the Argentine environmentalist community thought, unanimously describing as "historic" the Supreme Court ruling that ordered national, provincial, and Buenos Aires authorities to clean up the Riachuelo.

The decision was based on an article added to the constitution in 1994, which guarantees all inhabitants

In the last few decades, official promises to clean up the Riachuelo have abounded.

The Avellaneda Bridge. Photo: Claudio Gabis

in the country a "healthy environment" to live in.

However, the scant progress made so far was crudely exposed during a Nov. 30, 2016 hearing before the Supreme Court. That day Supreme Court president Ricardo Lorenzetti, an expert in ecology designated Goodwill Ambassador for Environmental Justice last year by the Organisation of American States (OAS), did not try to hide his disgust.

During the hearing, Gabriela Seijo, director of operations in Acumar, said that, for example, so far only 3,147 of 17,771 housing units which were to be built to relocate the families most exposed to the pollution have been completed. "If we keep up this pace, we will finish in 2036," she said.

Faced with this scenario, Minister of Environment and Sustainable Development Sergio Bergman tried to blame the governments of the late Néstor Kirchner (2003-2007), who was president when Acumar was created, and his widow and successor Cristina Fernández (2007-2015), who was president when the Court issued the ruling.

"The situation that we found was terrible. Not just because the Riachuelo was degraded and polluted to the same extent as, or worse than, when the judgment was handed down, but also because the body in charge of cleaning it up, Acumar, was not in a position to comply with the court order," Bergman told the Court.

However, the government of President Mauricio Macri, in office since December 2015, and Bergman himself have been in the administration for over a year and have not yet made progress towards the goals set for Acumar, which has 900 employees, many of whom were hired in 2016.

It was reported that 34,759 inspections in factories have been carried out and 57 plants have been closed down, but all of them temporarily, with no significant impacts on the environment. According to figures provided by Acumar, there are currently six million people living in the basin, at least 10 per cent of them in some 60 slums and shantytowns.

"It's true that Acumar has never done a good job. But this past year was the most disastrous. So much so that the president of the body did not even appear at the hearing before the Supreme Court," lawyer Andrés Nápoli, head of the Environment and Natural Resources Foundation (FARN), one of the five non-governmental organisations appointed by the Supreme Court to monitor compliance with the ruling, told IPS.

Indeed, Torti did not appear at the hearing in November and, a few days after the poor presentations given by other officials, he resigned.

"It's true that Acumar has never done a good job. But this past year was the most disastrous. So much so that the president of the body did not even appear at the hearing before the Supreme Court"
Andrés Nápoli, head of the Environment and Natural Resources Foundation (FARN),

Macri named as his replacement lawmaker Gladys González of the governing centre-right coalition Cambiemos, who has no background in environmental affairs. Nápoli said that, after the hearing, he asked Acumar to explain how the 5.2 billion dollars were spent, adding that if the answer was not satisfactory, he would file a lawsuit demanding an investigation into possible corruption.

"They have only cleaned up the riverbanks a little and removed many of the boats that had sunk decades ago," diplomat Raúl Estrada Oyuela, a member of the Association of La Boca, the neighbourhood where the Riachuelo runs into the Rio de la Plata, told IPS.

"But there is a lack of will to tackle the main problem, which is the pollution of the water, soil and air, because that would mean affecting the interests of the industries, which of course would have to make important investments if they were forced to switch to a clean production system," said Estrada, who is internationally known in environmental issues and who was president of the committee which in 1997 produced the Kyoto Protocol on climate change.

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What rural Alaska can teach the world about renewable energy

By DAVID W. SHAW
Ensia

I flew into Unalakleet, Alaska, on a late fall day. With about 700 people, Unalakleet is large by rural Alaska standards and serves as a regional hub. The village is located on a sandy spit of land where a clear river meets the turbid water of the Bering Sea.

Out the plane window the sun shone bright, glittering off the wind-tossed whitecaps of the sea. To the east, the rolling Nulato Hills, clad in autumn foliage, provided a picturesque backdrop. As the small plane banked for our approach, a row of wind turbines appeared atop a ridge. Installed in 2009 they are among the numerous renewable power installations that have popped up across rural Alaska in the past decade.

In more accessible parts of the planet, renewable energy is often embraced as a tool for reducing the threat of climate change and installed in spite of, rather than due to financial considerations. In Alaska, however, says Piper Foster Wilder, deputy director of the Renewable Energy Alaska Project, or REAP, "Economics, not the environment, are driving the shift to renewables."

That's not to say these remote villages in Alaska aren't dealing with environmental challenges. Of course they are. In fact, the far north is warming at more than twice the rate of the rest of the planet. Permafrost is melting and as the ground thaws, it causes instability beneath the foundations of buildings and oceans and rivers encroach,

eroding shorelines. Coastal villages, once protected for much of the year by shore-fast sea ice, are increasingly exposed to storms and flooding as that ice recedes, even causing some communities to begin moving to safer, inland locations.

In that big country, the distances between the few scattered communities are daunting. If power can be generated using local renewables, the up-front cost is almost always worth it.

But, in many remote Alaskan villages, the cost of electricity is the highest in the nation, reaching a wallet-emptying US$1 per kilowatt-hour in some communities (the national average is US$0.12/kwh). The price is due to the cost of hauling fossil fuels (primarily diesel) by plane or barge to these remote areas. For example, the western half of Alaska, where Unalakleet lies, has no highways, no railroad tracks, no power lines. In that big country, the distances between the few scattered communities are daunting. If power can be generated using local renewables, the up-front cost is almost always worth it.

"We are up to 99.7 percent renewable energy," says Lloyd Shanley, power generation manager at Kodiak Electric Association, Inc., which provides electricity to the area around the town of Kodiak (population 6,400) on Kodiak Island off the southwestern coast of the Alaska Peninsula. The primary source of KEA's power is an alpine lake that lies in the mountains above town. With a little creative engineering, KEA ran a penstock from the lake's steep outflow stream, channeling the water into a turbine system that contributes about 80 percent of the community's power needs. An additional 20 percent comes from a handful of wind turbines on the ridges around town. "Our conversion to renewables has resulted in no increased cost to consumers in nearly 20 years," Shanley says, a statistic that few communities, regardless of location, can claim.

"Kodiak should be a template," says Wilder, but that template needs an asterisk. "The town there benefits from its topography, which allows the very successful use of small-scale hydro and wind. But every community has an abundance of some resource."

For many villages on Alaska's long, exposed coast, that resource is wind.

The turbines I saw from my plane window as I descended into Unalakleet have a capacity of up to 600 kilowatts of power, enough to offset the consumption of tens of thousands of gallons of diesel over the course of a year.

Wind turbines on Pillar Mountain ridge.
Photo: © rckbtyn

Across Alaska, similar projects are popping up. A map of renewable power projects on the REAP website shows wind turbine icons up and down the state's coast. Gambell, Savoonga, Nome, Wales, Shaktoolik, Emmonak, Chevak and more than a dozen other villages have embraced wind-generated power. Indeed wind turbines surrounding Alaska's villages are so common as to no longer be remarkable.

What is remarkable is that these small, remote, economically challenged communities have successfully integrated renewable energy into their existing, diesel-based power grids with more success than just about anywhere else in the world. Remarkable indeed, and also a lesson to be applied elsewhere. Some 1.2 billion people on the planet do not currently have access to electricity. And there's a lot these people can learn from Alaska. "Microgrids, not large-scale power generation, will be the most effective way to provide electricity to those still unconnected," Wilder says. Microgrids are essentially small power grids customized for single communities.

In the case of rural Alaska, existing generator-based grids were modified to include renewables, but developing a microgrid from scratch makes the inclusion of renewable power sources easier.

Unlike large, centralized systems that rely on enormous

power plants, microgrids provide power to small geographic areas. Ideally, their power sources, like the wind blowing across the hills of Unalakleet or Kodiak's alpine lake, take advantage of locally abundant renewables.

Often, when people envision expanding the use of renewables to communities in need, they think of expansive solar farms, rows of wind turbines and large-scale hydro projects, but as Wilder points out, there is no one-size-fits-all solution. While she emphasizes efficiency first, other decisions depend on the community.

"The first thing we address in a community is efficiency," she says. "Then we work on the power grid and last consider the best sources of power." That allows the integration of renewables to take into account the resources and challenges of each community.

Every community, whether it's an Arctic village or a small town in Bangladesh, is unique, and there are no formulaic solutions. Whether turbines spinning in the cold wind of Alaska's coast or the precipitous streams of Kodiak, electric generation and delivery systems work best when they are adapted to the communities they serve.

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Photo: © NPS.gov

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Rethink 'carbon' to make CO2 work for climate change solutions

By PAUL BUNJE

The Hill

An old cliché declares that the challenges we face often present the greatest opportunities. Yet in the case of addressing climate change, we have historically remained too wedded to litigating the existence of the problem at all, often because the proposed solutions are perceived as negative to many stakeholders.

But in order to address this massive challenge, we must think about it differently first. Turning a problem into an opportunity for innovation and economic growth is critical.

Social psychology offers a potential path for changing mindsets: by illuminating advantageous solutions to a problem, the problem itself becomes tangible – in essence, real. It is becoming increasingly clear that innovation is a key to both identifying the opportunities presented by the threat of climate change, and for inspiring these real solutions that have real human benefit – economic, personal and social.

We no longer need to rely solely on large governmental or corporate initiatives to identify new solutions. Technological innovation spurred by crowdsourcing and incentive prizes can be harnessed as instruments of change for everything from reducing carbon emissions to creating resiliency in our communities to the effects of climate change. But before unleashing the power of technology, we must innovate in other ways.

First and foremost, we need to innovate in our approach to the situation — to think about carbon differently. Rather than battle about the villainy of carbon dioxide — and it is clear that CO2 emissions are the primary driver of anthropogenic climate change — it is high time we change the way we value of this molecule in the first place.

As a product of generating energy from fossil fuels, it is merely a waste. But CO2 plays a vital role in our global carbon cycle. Indeed, plants the world over use CO2 as a feedstock, producing oxygen as their waste. Seeing the actual value of this element is key to changing this paradigm.

Reimagining the role of CO2 in our lives requires an increased sophistication with how we view carbon. William McDonough has articulated a "new language for carbon" that highlights the myriad ways carbon operates both in natural and human systems. Living carbon is valuable to living creatures, durable carbon is locked up in an unusable state, and fugitive carbon is the unwanted carbon in our system — the portion that can cause damage.

Reimagining carbon — by accurately describing how an inanimate molecule can be valued based on how we use it — is crucial if we are to properly deal with the true threat: the fugitive carbon in our atmo-

sphere. Regardless of the precise mix of fuels in a future low-carbon energy system, most estimates indicate that our energy supply will rely on fossil fuels for the foreseeable future. This means that reducing carbon dioxide emissions from fossil fuel burning is critical, even as other strategies for reducing emissions are ramped up.

Teams in the NRG COSIA Carbon XPRIZE are rapidly developing the best ways to do just that. Twenty-seven semi-finalist teams from around the world are currently testing technologies that turn the carbon dioxide produced from electricity generation from fossil fuels into products that can be sold in the marketplace.

Products being produced include an incredible array of possible working carbon uses: concretes and other building materials, liquid fuels, proteins for fish feed, precursors for paints and fertilizers, and advanced materials such as graphene and nanotubes.

This is an early win for innovation: Carbon XPRIZE teams are showing that fugitive carbon (the waste from electricity generation) can be turned into working carbon that serves as a feedstock to help power our daily lives.

In success, these innovators will demonstrate that building new markets and earning a profit can be key solutions to reducing the flow of CO2 into our atmosphere. All of these solutions are a demonstration of the vast potential for innovators to turn the climate challenge into an opportunity. Governments can provide guidance, incentives and support. Actions that include appropriate tax incentives, preferred purchasing guidelines, and loan guarantees that provide confidence to investors would be incredibly helpful in unleashing the power of innovators to develop new technologies with real market potential.

We must direct the human spirit of innovation to view the CO2 problem as an opportunity to create a better future. We need to accelerate innovation through investment and incentive to tackle the challenge while realizing the opportunity it presents.

By providing the right incentives and opening up the power of solving to anyone through tools like prizes and crowdsourcing, we can turn a new perspective on carbon into an industry of climate opportunity. This new perspective can lead to profit and new market growth. Societally, reimagining the causes of our problems is vital to see the opportunities for solving them.

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Urbanisation can be good for the environment

Some 64 per cent of Asia will be urbanised by 2050 and national governments are joining hands with the private sector to leverage the opportunity for sustainable development.

By TOMMY LEONG
Schneider Electric

Urbanisation has never resonated stronger among countries – developed and developing alike – than now.

While the recently documented New Urban Agenda (Habitat III) posits that this century will witness a substantial majority of the world's population living in urban environments, this is not new to parties who have been involved in the Habitat process since 1976. In fact, investments in cities were reduced and urban programmes were slashed 20 years since, contributing to the urgent call for the implementation of urban planning.

Environmental sustainability is one of the core principles addressed, in order to build urban resilience, as well as mitigate and adapt to climate change. This is one of the most crucial concerns in Asia, being one of the world's most climate vulnerable regions and a growing emitter of greenhouse gases in its own right, accounting for more than 40 per cent of the total. The region is urbanising at a more rapid rate than any other region in the world – by 2050, some 64 per cent of Asia will become urban.

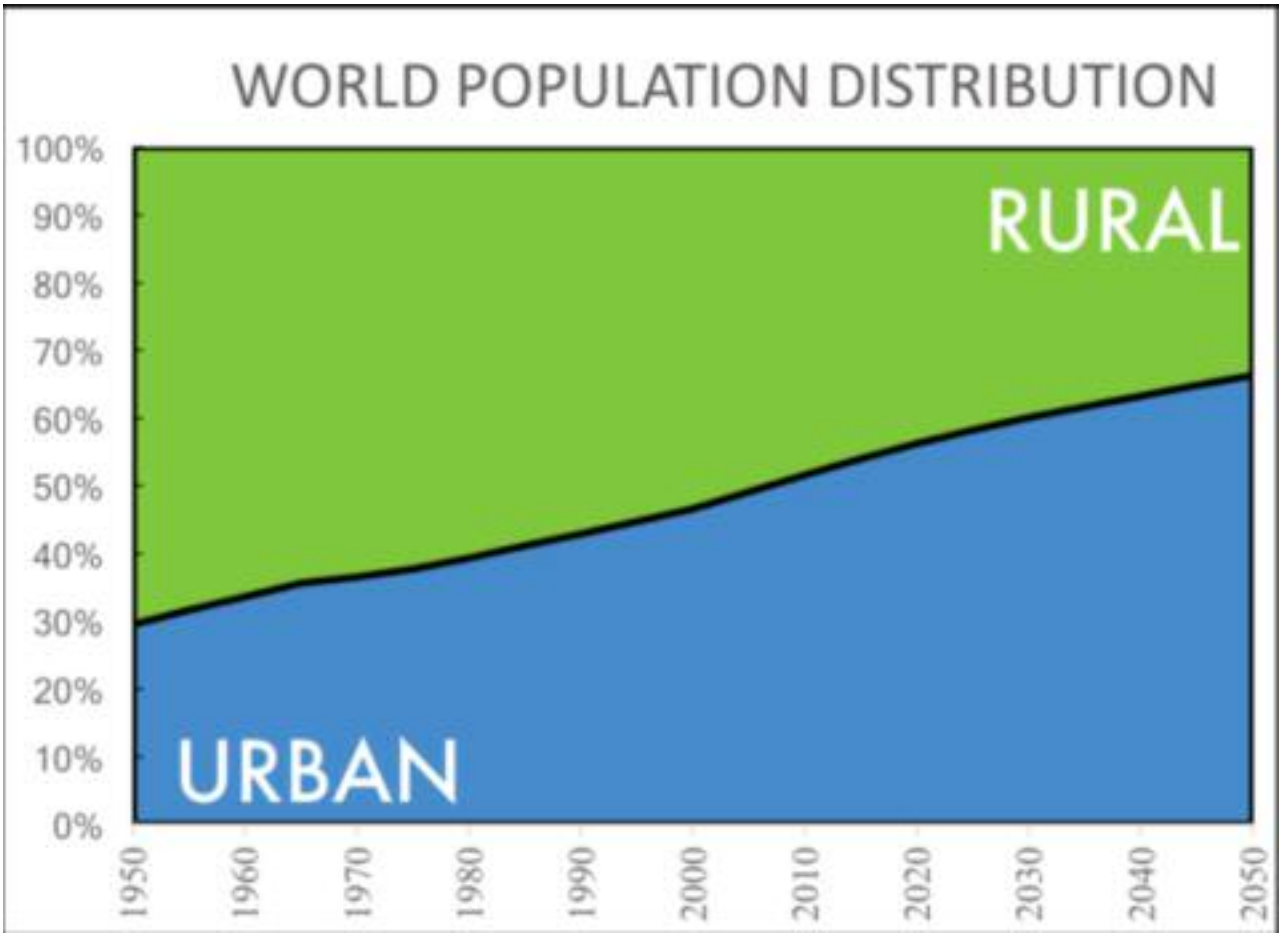
Meanwhile, with estimates suggesting that cities are responsible for 75 per cent of global CO2 emissions – transport and buildings being among the largest contributors – it is not surprising that many Asian governments and the private sector are coming together to rethink how the urbanisation megatrend can be leveraged to further, rather than to hinder, sustainable development.

Building cities of the future

To derive environmental advantages from urbanisation and today's widespread connectivity, city planners and governments should consider running a city in the same vein as running a multinational company – gather key data, use that information effectively, and have a clear, long-term strategy.

This is where private sectors can contribute their industry expertise – by working with municipalities and partners to ensure that city leaders have all of these things in place. This might involve tracking, managing, and forecasting sustainability metrics such as carbon, water and waste; optimising the performance of building infrastructure; and developing long-term sustainability plans to address priorities, needs, and issues.

Further, a targeted and systematic approach can help cities perform at optimum efficiency. Our practice entails looking into where energy issues are going to come into play, then breaking cities down into their various departments, such as transportation, water, energy, buildings and security. As a next step, we help cities integrate systems across verticals and start to drive further



Percentage of World Population: Urban vs. Rural. Image: United Nations, Department of Economic and Social Affairs

efficiencies from the whole. The idea is to generate savings that cities can then use to improve education and other elements of city life.

There's nothing stopping cities from starting to make the change to become more liveable, more efficient, and more sustainable. In fact, it's paramount that they do it if they want to keep up with urbanisation trends and ensure that the world holds warming to no more than 2°C.

The good news is that many Asian cities are actively evolving and innovating in using smart technologies to achieve the goals of sustainability, liveability, and responsiveness, and their efforts can be seen in three key areas – buildings, water and energy.

Smart buildings

According to the United Nations Environment Programme, energy consumed by buildings has grown to around 40 per cent of total consumption worldwide.

Studies have shown that only a quarter of a building's costs are associated with capital expenses. The remaining three-quarters go toward operating a building over its lifecycle. Moreover, energy use in buildings is only going to rise – the International Energy Agency predicts energy demand will increase by 50 per cent by 2050.

Integrated building management solutions are an excellent way to enable smart, sustainable ecosystems inside and outside of buildings, while even new and existing government buildings can be transformed into energy efficient buildings.

For instance, the Prime Minister's Office in Malaysia achieved 40 per cent of energy savings and is certified the platinum status of Malaysia's green building standard, the Green Building Index (GBI), after adopting our Building Automation and Energy Monitoring System. This retrofitting project

simultaneously helps Malaysia meet their Copenhagen promise to reduce 40 per cent carbon emissions by 2020.

Solutions with a combination of software and hardware would provide greater levels of insight and analysis using energy and operational data; as a result, building owners and operators gain a better understanding of their physical assets and can save up to 30 per cent on energy costs.

Smart water

In many Asian cities, the combination of population growth and a sharp increase in demand for energy and manufacturing has major repercussions on water as a resource. The World Bank forecasts a global deficit of 40 per cent between anticipated demand and available water resources by 2030.

Smart water solutions such as improving water management systems and networks, preventing and reducing leaks, and optimising processing are critical to address this challenge.

When implemented in East Water's water pipe network – Thailand's most advanced, efficient and complete water pipeline at approximately 400km long – such solutions reduced water loss in the pipeline from 20 per cent to 3 per cent, and reduced energy consumption by 5 per cent.

Smart energy

Energy demand in Asia looks set to double in the next 15 years, with the growth in demand largely concentrated in the region's cities. Since fossil fuels remain the main source of Asian cities' power, generating electricity in a sustainable way poses a great challenge.

Thankfully, the growth in alternative sources of energy has created new opportunities for gover-

A view of Dhaka, Bangladesh. Asia is urbanising more quickly than any other region in the world, and 64 per cent of Asia will be urban by 2050.

nments and companies in Asia to integrate renewable energy sources such as solar and wind with smarter upgrade projects across the region.

One such example is the San Lorenzo Wind Farm, which is part of an effort to give greater emphasis to the use of more sustainable energy sources in the Philippines. It adopted an end-to-end solution that protects the wind farm from many system faults and ensures reliable production all-year round, especially as it is projected to generate over 120 GWh of electricity annually and be capable of sustaining the energy demands of 48,000 households.

Smart grid solutions are also playing a central role in transforming the power industry. By letting businesses know how much power they are using, the machines involved and the costs every minute of the day, you provide them with the necessary tools to measure and reduce energy consumption.

Companies are leveraging the use of Internet of Things (IoT) and smart grids to build more efficient energy infrastructure in cities. When electrical systems of buildings are connected to smart grids, the grids detect power usage in different parts of the city and divert power to places where it is needed most.

As urbanisation rapidly transforms the face of Asia and the lives of its citizens, everyone from policy makers to companies and residents have an important role to play in ensuring that the benefits that urban expansion brings is efficient, inclusive and sustainable – that Life is On for everyone, everywhere at every moment.

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Photo: Beyond My Ken

WILLIAMSBURG

The Domino Sugar Refinery was the first refinery of the American Sugar Refining Company. It processed more than half of the sugar sold in the United States.

Located in the neighborhood of Williamsburg in Brooklyn, operated between 1882 and 2004. During its final years of activity, the Domino refinery recorded one of New York City's longest labor strikes in history - the strike started in June 1999 and ended in February 2001. Enough to delay but not to avoid the inevitable closure.

The refinery stopped operating in 2004. Three buildings were given landmark status in 2007. In fall 2014, demolition of the remaining structure began. ONE

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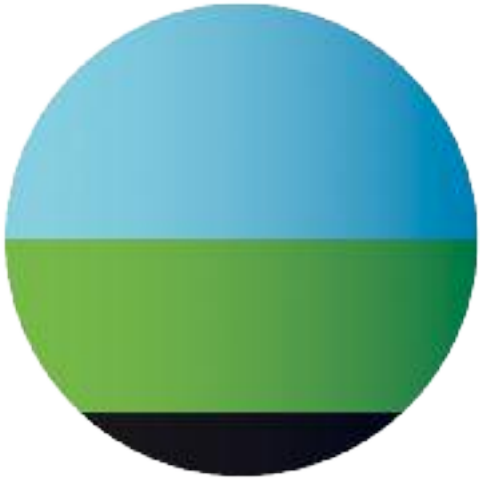

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