A Challenging Climate 2.0

What banks must do to combat climate change

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BANKTrack

Content

This is the fully revised Copenhagen edition of the position of BankTrack on the role of banks in combating climate change. The first edition of this paper was published in 2007. Comments to this position paper welcome at:

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Executive Summary

Global climate change as it is now unfolding is the planet's greatest environmental challenge, directly threatening the prosperity, livelihoods and security of billions of people worldwide. If current trends in greenhouse gas emissions continue, average global temperatures could rise as much as 6.4°C by the end of this century, with devastating and irreversible effects for all people and the planet.[1]

To avoid climate change turning into an uncontrollable process, global average temperatures should peak as far below 1.5-2°C over pre-industrial levels as possible. Even with this temperature rise the world will face dramatically different environmental and atmospheric circumstances. Millions of peoples' lives will be severely impacted by drought, floods, food shortages, spread of communicable diseases, biodiversity loss, forced resettlement of communities and widespread loss of livelihood. The vast majority of those affected will have contributed little to the current levels of greenhouse gases in the atmosphere.[2]

Public policy responses to climate change so far have been inconsistent and largely inadequate. Governments must take up the climate challenge with great urgency and determination at the upcoming Copenhagen climate summit. To have a realistic chance of staying within the 2°C limit, global greenhouse gas (GHG) pollution will need to be reduced over 85 percent below 2000 levels by 2050, with a steep decline in GHG emissions starting as soon as possible.[3] Governments must agree to effective targets for reducing GHG pollution to this level, and adopt a post-Kyoto framework that allows those targets to be achieved. In particular, industrialized countries that have produced the bulk of greenhouse gases must drastically and urgently reduce their emissions and provide vast resources for mitigation and adaption to a changing climate if developing countries are to have any atmospheric space for their rightful development.

However, action from other actors cannot wait until governments find the political will to effectively deal with climate change. Every institution and individual must act to limit GHG pollution within their own sphere of influence. This is particularly true for institutions and business that have relatively large impacts on climate change.

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[1] Intergovernmental Panel on Climate Change, *Fourth Assessment Report: Working Group I Report "The Physical Science Basis": Summary For Policymakers*, at 13 (2007).

[2] Oxfam calculates that the number of victims of climate related disasters my increase by 50 percent in 2015, to 375 million people. If not kept in check, climate change may lead in 2050 to over 200 million people in need of resettlement due to housing and livelihood loss. Oxfam 'Beyond aid' http://www.oxfam.org/sites/www.oxfam.org/files/bp_132_beyond_aid_en_0.pdf

[3] Intergovernmental Panel on Climate Change (2007), Fourth Assessment Report: *Working Group III Report:* Mitigation of Climate Change: Summary For Policymakers, at p. 15; European Commission (2007), Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - Limiting global climate change to 2 degrees Celsius - The way ahead for 2020 and beyond.

The role of commercial banks

Through their lending, investment, and other financial services, commercial banks[4] play an indispensable role in mobilizing and allocating financial resources for the private sector. As such, they are in a unique position to either help further entrench patterns of energy production and intensive energy use that are based on the burning of fossil fuels, or to catalyze the necessary transition to an economy that minimizes GHG pollution and relies on energy efficiency and low/no carbon energy sources. BankTrack believes that with this influential position comes a special responsibility for banks to play a leadership role in addressing the challenges of climate change.

To some degree, banks may place climate change within the logic of the "business case" for sustainability. After all, there are substantial opportunities to profit from investments in renewable energy, energy efficiency and the adaptation to a changing climate.[5] Most banks will also add the business opportunities provided by carbon trading to this list. Focusing on climate change is thus presented as a winning business strategy.

But relying on market mechanisms and traditional business models alone will not deliver to the task at hand. The climate crisis has been described as the "greatest and widest-ranging market failure ever seen"[6]. As a result, there remain enormous opportunities for banks -and business in general- to maximize short-term profits and shareholder value by supporting greenhouse gas-intensive investments -such as fossil fuel extraction- even where this leads to staggering social and environmental costs.

A bank wishing to disentangle itself from clients and activities with a negative impact on climate change must be willing to forego such short term business opportunities, in favour of long term gains.[7] BankTrack also believes that banks' current emphasis on carbon trading as a solution to the climate crisis is fundamentally misdirected. There is growing evidence that carbon markets do little to contribute to real emission reduction, while delaying the necessary structural shift from carbon to no/low carbon energy economy. In addition, they often finance projects with adverse impacts on marginalized communities in the Global South. [8]

Governments responded to the financial crisis at the end of 2008 by providing enormous sums of public money to a great number of private banks. Many of these banks are now owned in part by the taxpayers. The public stake in these banks creates an added responsibility, and in some cases, possibly even a legal duty, to ensure that they are

[4] While action is required from all financial institutions, this paper is focused primarily on commercial banks operating at national or international level offering banking services to retail, corporate and government clients.
[5] Government of the United Kingdom, Investing in the Future - Background Paper for European Conference on Corporate Social Responsibility and the Financial Sector, London, December 2005.
[6] Nicholas Stern, Stern Review: The Economics of Climate Change, at i (2007).
[7] Bill Gates famously referred to this as "creative capitalism": a new business model in which the public good is linked to the profit motive in ways that help advance both. Bill Gates, "A New Approach to Capitalism, Remarks delivered at the World Economic Forum, Davos, Switzerland, January 24, 2008.
[8] See, for example, Tamra Gilbertson and Oscar Reyes, "Carbon Trading: How it works and why it fails." Dag Hammarsjkold Foundation, Upssalla. November, 2009. http://www.dhf.uu.se/pdffiler/cc7/cc7_web.pdf

operating in the public interest, or at least as 'best practice' institutions in the sector.[9]

BankTrack calls upon all international commercial banks to develop, in consultation with civil society stakeholders, a sufficiently ambitious, publicly-available climate policy that addresses how the bank will reduce the climate impacts of its lending and investments and determines how it will help finance the transition to a low-carbon economy.

First, banks should take steps to **disengage from all activities and projects that substantially contribute to climate change**. They should:

- End support for all new coal, oil and gas extraction and delivery;
- End support for all new coal-fired power plants; and
- End support for the most harmful and least efficient practices in other GHG-intensive sectors, such as agriculture, forestry and transportation;

Second, banks should **minimize the extent to which their remaining activities and investments contribute to climate change**. Towards this end, they should:

- Assess and report on GHG pollution associated with all their loans, investments, and other financial services;
- Establish sufficiently ambitious portfolio and business-unit emissions reduction targets in line with current science on climate stabilization; and
- Develop a set of tools to address climate issues and reduce GHG pollution across the full range of their operations and services.

Third, banks should **increase their support for the development and use of climate-friendly technologies and production processes**. Accordingly, they should:

- Increase support for GHG pollution reduction technology, renewable energy production and energy efficiency in all business lines; and
- Develop products and services to help retail customers address climate change.

Fourth, **banks should not engage in so called 'false solutions' to climate change**, such as carbon trading and the financing of nuclear energy, large scale hydro power, biofuel production with a negative socio-environmental impact, natural gas exploration and carbon capture and storage.

[9] See for an example of how this would work for RBS in the United Kingdom PLATFORM 2009 'Towards a Royal Bank of Sustainability; protecting taxpayers' interest; cutting carbon risk'. http://www.banktrack.org/download/royal_bank_of_sustainability

1. What on earth is happening? Climate change and its impacts

It is now beyond dispute that the average global temperature is raising, and that further changes in the worlds climate are inevitable. The only question left is how extreme these changes will be and how rapidly the effects of climate change will profoundly start to affect people's lives and the environment.

The scale and intensity of ongoing climate impacts are truly alarming. For example, the Global Humanitarian Forum estimates that climate change *already* causes over 300.000 deaths, seriously affects the lives of 325 million people, and causes US $125 billion in economic losses each year.[10] These impacts will only get worse as global warming intensifies. According to the Intergovernmental Panel on Climate Change (IPCC), the most authoritative interpreter of the scientific evidence on climate change, world temperatures could rise between 1.1°C –the temperature rise that is now considered to be already inevitable- and 6.4°C by the end of this century.[11] Such a dramatic rise would cause extraordinary alterations in the global environment, and would likely have profound and potentially disastrous economic, social and health impacts on many human populations. The IPCC anticipates:

- Increased flooding risks for hundreds of millions of residents of coastal and riparian areas due to more extreme coastal weather events, sea level rise, altered rain fall patterns, and shorter run-off seasons;
- Altered rainfall patterns and adverse impacts on glacier and snow-pack fed water sources that could leave 2 billion people short of water by 2050;
- Significant changes in global food production patterns, including adverse affects on the agricultural production in many regions -especially in subsistence sectors at low latitudes- and overall global food production decreases after a 3° C temperature rise;
- Increased resource competition, large-scale internal displacements, and cross border migrations as the carrying capacity of vulnerable regions decreases;
- Adverse health impacts and increased mortality of millions of people due to increased malnutrition and new disease transmission vectors;
- Disproportionate adverse impacts on poor and subsistence communities, who may have more limited adaptive capacities, and are more dependent on climate-sensitive resources such as local water and food supplies;
- A high risk of extinction for 20-30 percent of plant and animal species;
- Substantial losses of coral reefs, salt marshes, mangrove forests, tropical rainforests, glaciers, sea ice, and other vulnerable ecosystems.[12]

[10] Global Humanitarian Forum, Human Impact Report: Climate Change: The Anatomy of a Silent Crisis (2009). Available at http://ghfgeneva.org/Portals/0/pdfs/human_impact_report.pdf

[11] Intergovernmental Panel on Climate Change, Fourth Assessment Report: Summary for Policymakers, at 13 (2007).

[12] Climate Change 2007: Impacts, Adaptation and Vulnerability - Working Group II Contribution to the

Apart from these social and environmental upheavals, the economic costs of unmitigated climate change could also be catastrophic. Nicholas Stern, former chief economist at the World Bank, in his 2007 report to the British Government estimates that climate change could cost 5 to 20 percent of the world's annual gross domestic product, and would therefore be equivalent in scale to the Great Depression or each of the world wars. He also estimates that avoiding climate change would cost only a fraction of these costs (1 to 2 percent of world's gross domestic product) if action is taken without further delay.[13]

While the amounts needed to combat climate change appear staggering governments have shown that they can swiftly mobilize resources at enormous scale where political will is present. For example, in response to the global economic crisis The US government has committed up to $11 trillion to stabilize its economy, while European governments committed as much as $4 trillion.[14]

2. Banks and climate change

Banks play an important role in mobilizing financial resources for economic activities. In particular, large-scale infrastructure and capital investments -whether they are climate-friendly or climate damaging- often require the financial support of large banks. Since these projects may remain in operation for decades, the investment decisions of the banking sector today can have enormous and lasting impacts on our ability to meet global GHG reduction targets and avert the most severe impacts of global climate change. This puts banks in a unique position to play a proactive role in helping to catalyze the necessary shift toward a low/no carbon economy.[15]

To date, however, climate impacts have influenced portfolio decisions of most banks only at the margins, if at all. Banks have traditionally been willing to support incumbent industries and familiar technologies that have enormous climate impacts. In addition, economies of scale have incentivized a focus on large-scale, capital-intensive projects. As a result, GHG-intensive operations such as coal-fired power plants and oil and gas development have had ready access to the capital markets, with commercial banks financing a significant share of these investments. Indeed, some banks indirectly finance more GHG pollution than is produced by entire countries.[16]

Intergovernmental Panel on Climate Change Fourth Assessment Report, IPCC, Geneva, 13 April 2007.

[13] Nicholas Stern, Stern Review: The Economics of Climate Change, (2007); Conversely, the Stern Review found that investment in mitigation measures that could avert the most dangerous climate change scenarios would require only around 1% of global GDP by 2050. Id., at xii.

[14] http://money.cnn.com/news/storysupplement/economy/bailouttracker/. http://www.businessweek.com/globalbiz/content/apr2009/gb20090410_254738.htm?chan=globalbiz_europe+index+page_top+stories

[15] This logic can also be applied to investment decisions made in the past. Over the last two decades many banks have continued to finance fossil fuel extraction and provide lending for fossil fuel based energy generation project, even in the face of mounting evidence of the negative impact of such investments on the climate. This leaves them with a specific responsibility to change course and help restore the situation we find ourselves in today.

[16] Milieudefensie – Investing in Climate Change (2007), PLATFORM – The Oil & Gas Bank (2007), Rainforest Action Network – Financing Global Warming: Canadian banks and fossil fuels (2008). http://www.milieudefensie.nl/klimaat/publicaties/rapporten/investinginclimatechange2007.pdf;

Fortunately, this is slowly beginning to change. Banks, like other private sector actors, are awakening to the myriad impacts that climate change will have on their business. For example, new national and international regulatory frameworks to address climate change will require their clients to reduce their GHG pollution while creating new opportunities for energy efficiency, and clean energy investments. In addition, the increased frequency and intensity of severe weather events will present additional property and casualty risks to a broad array of bank clients and thus on the portfolio stability of banks themselves. Finally, increasing public concern regarding global warming will add strong reputational risks to those institutions that are perceived as industry laggards.[17]

As a result, financial institutions are increasingly recognizing both the financial risks of business as usual and the profit-making opportunities associated with the transition to a climate-friendly economy. Nevertheless, the 'business case' alone will not catalyse sufficient action to quickly and dramatically lower GHG pollution and stabilize the global climate. The climate crisis is a classic market failure—perhaps "the greatest and widest-ranging one we've ever seen"[18] as the market did -and does- not ensure the internalization of the massive costs of climate change in our production and consumption patterns. As a result, price signals, profit-maximization and other traditional drivers of business decision-making will not be adequate to the task of steering banks towards reducing their climate impact.

Governments must take the lead in establishing ambitious emissions targets and timelines, and implementing the necessary regulatory initiatives to meet those targets. But private sector initiative cannot wait until governments address these challenges. Banks must act now.

2.1 Bank responses to climate change

The response of most banks to climate change has focused more on managing the risks posed by climate change to their business, rather than eliminating the risks posed by their business to accelerating climate change.

A number of banks have developed specific climate policies, including climate clauses in their lending and investment criteria. A few banks have also signed up to collective voluntary standards recently developed by US banks and the Climate group. Finally, banks are positioning themselves to play a major role in the carbon markets.

Bank policies

Banks increasingly integrate climate change considerations into their lending and investment policies. JP Morgan Chase, for example, has committed to "quantify the

www.climatefriendlybanking.org

[17] Due to the visible market presence and intangible product offerings of banking institutions, they are particularly vulnerable to the reputational risks of being associated with climate-harming investments. The Carbon Trust, Brand Value (2005).

[18] Nicholas Stern, Stern Review: The Economics of Climate Change, (2007).

financial cost of greenhouse gas emissions and integrate them into financial analysis" of power sector projects, and has stated that "internalizing the cost of carbon in this way may alter [its] investment choices..."[19] Bank of America has similarly committed to "evaluate the level of financial sector risk through the finance of GHG emission intensive industries."[20] Others are beginning to integrate climate and carbon risk assessments into their equity analysis and investment advisory services. For example, a Citigroup analyst recently cited the extreme regulatory risks facing the coal industry in downgrading U.S. coal company stocks.[21]

While laudable, most bank policies fall short of ensuring that the bank is not involved in those businesses that contribute most to climate change –fossil fuel exploration and fossil fuel based power generation, yet also provide profitable business opportunities. JP Morgan Chase, for example, is being heavily criticized for its on-going involvement in financing mountain top removal coal mining in the U.S., the most destructive form of coal mining practiced in North America.[22]

Carbon principles and Climate principles

In 2008, two groups of prominent financial institutions adopted different sets of voluntary frameworks for managing the climate impact of their operations.

First, in February 2008, a group of US banks released the 'Carbon Principles' a procedural approach for assessing carbon risks faced by companies building new coal-fired electric power plants in the United States.[23] The principles were designed to address the risks associated with regulatory uncertainty, and were a response to growing public concern over the proliferation of plans for more than one hundred new coal-fired power plants in the United States.

Then, in December 2008, a second group of international banks and insurance companies released the 'Climate Principles'.[24] Broader in scope and ambition than the Carbon Principles, the Climate Principles seek to 'establish best-practice standards for financial institutions to address the implications of climate change across their entire range of advisory, lending, investing, and insurance services'. At the launch, the Climate Principles were endorsed by only three leading international banks and two insurance companies and have not been further adopted since, but its proponents still hope the Principles lead to the establishment of a climate policy standard for the finance sector. [25]

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[19] (JP Morgan Chase, Environmental Policy http://www.jpmorganchase.com/cm/cs?pagename=Chase/Href&urlname=jpmc/community/env/policy/clim).
[20] (Bank of America Climate Change Position, www.bankofamerica.com/environment/index.cfm?template=env_clichangepos).
[21] (Reuters, "Greens rejoice as analyst sours on U.S. coal, July 20, 2007 http://www.alertnet.org/thenews/newsdesk/N2089702.htm).
[22] http://www.banktrack.org/show/dodgydeals/mountain_top_removal_coal_mining
[23] Citi, JPMorgan Chase and Merrill Lynch, Later joined by Bank of America, Credit Suisse and Wells Fargo, see www.carbonprinciples.org
[24] http://www.theclimategroup.org/about/corporate_leadership/climate_principles
[25] Credit Agricole, HSBC, Munich Re, Standard Chartered, Swiss Re

The signatories to the Carbon Principles and the Climate Principles properly acknowledge that they must do their part in combating climate change. Both initiatives tend to emphasize the wide range of business opportunities that financial institutions will have in helping to facilitate the implementation of low carbon solutions to the climate crisis but fall short in steering the sector away from the sectors and activities most damaging to the climate. Neither initiative addresses climate change risks with the rigor, urgency or ambition that the challenge at hand requires.[26]

Carbon trading

Carbon trading, both trading permits in a cap and trade system and in carbon offsets has become a common component of banks' individual and collective response to the threat of climate change [27].

However, there has been growing doubt about the contribution that carbon trading is making to reducing GHG emissions. BankTrack believes that the emphasis placed by banks on carbon trading is leading away from the real contribution that banks could be making to solve the climate crisis. Unlike carbon trading, commercial lending and securities underwriting can actually capitalize new climate-friendly activities. Venture capital and private equity can provide critical financing for emerging low-carbon technologies. Asset management, when combined with active ownership strategies such as shareholder engagement and proxy voting, can positively impact companies' climate strategies.

Carbon trading on the other hand, especially through banks' proprietary trading desks, simply is a way for banks to make money off money, without contributing new capital towards solving climate change. Of particular concern are the potential systemic risks that may emerge from the use of increasingly complex carbon trading instruments, which are built on an over-abundance of "sub-prime" carbon credits (subprime carbon are carbon credits that are based on promises to reduce emissions that fail to deliver and collapse in financial value). As one widely reported study found for the U.S, "the federal cap and trade proposals put forth so far would create a system that poses almost identical challenges as those in the mortgage-lending industry."[28] The crucial difference here is that, unfortunately, nature doesn't do bailouts.

For more details on why banks' emphasis on carbon trading is misguided, see Appendix I, on False Solutions.

[26] For a comprehensive critique of both sets of principles see 'Meek principles for a tough Climate' , BankTrack 2009

[27] For example, the Climate Principles state that banks will "develop expertise to support emissions trading".

[28] http://www.foe.org/sites/default/files/Credit_Crisis_and_Climate.pdf

3. What banks must do to combat climate change

So far, the banking sector has not take up its responsibility for adequately combating climate change. To meet their responsibility, all banks should develop, in consultation with civil society organizations and other stakeholders, a comprehensive, robust framework of climate policies and practices whose ambition level is commensurate with the scale of the challenge at hand. This framework should include climate protection performance policies, management tools and oversight mechanisms that are as rigorous as those that they already use to ensure compliance with other corporate policies and strategic objectives, such as their credit rating and risk management frameworks.

Specifically, banks must adopt strategies to (1) immediately end support for all activities that substantially contribute to climate change (exclusion approach); (2) severely reduce the climate impacts of all remaining lending and investments through a best in class approach; and (3) positively contribute to the rapid transition to a low/no carbon economy. The following paragraphs provide detail on the elements of such a policy.

3.1 End support for the most destructive activities

End support for new coal, oil and gas extraction and delivery

Virtually all observers agree that the use of fossil fuel for energy generation and transport purposes must be drastically and rapidly reduced if the most serious impacts of climate change are to be avoided. The 2007 report of the Intergovernmental Panel on Climate Change concluded that in order to have a realistic chance of staying as far below 2°C as possible, it would be necessary to stabilize CO_2eq concentrations below 450 ppm. This implies that global greenhouse gas (GHG) pollution must be reduced over 85 percent below 2000 levels by 2050, with a steep decline in GHG emissions starting as soon as possible.[29] As the science has progressed, however, an increasing number of leading climatologists are warning that CO_2eq concentrations must even stabilize below 350ppm to avoid dangerous interference with the climate system, which implies achieving even more drastic and urgent reductions than foreseen in the IPCC report.[30]

The carbon content of all currently known, economically recoverable fossil fuel reserves already far exceeds the world's remaining carbon sink capacity. In fact, less than half of these reserves could be exploited if we are to have a reasonable chance of staying below

[29] Intergovernmental Panel on Climate Change (2007), Fourth Assessment Report: *Working Group III Report:* Mitigation of Climate Change: Summary For Policymakers, at p. 15; European Commission (2007), Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - Limiting global climate change to 2 degrees Celsius - The way ahead for 2020 and beyond.

[30] J. Hansen, M. Sato, P. Kharecha, D. Beerling,V. Masson-Delmotte, M. Pagani, M. Raymo, D. Royer, J. Zachos, Target Atmospheric CO2: Where Should Humanity Aim?, available at http://www.columbia.edu/~jeh1/2008/TargetCO2_20080407.pdf

the 2°C/450 ppm target.[31] From a climate perspective, then, it is utterly irresponsible to seek out and develop new fossil fuel reserves that can not be consumed without dramatic consequences for the climate. New exploration and development can only put greater pressure on the world's remaining carbon sink capacity and serve to derail any credible effort to stabilize climate change.

Yet, the search for new recoverable fossil fuel reserves has only increased and is now reaching into the remotest parts of the planet. In the last decade global oil and gas companies spent approximately $200 billion developing new energy projects.[32] The oil sector is developing increasingly dirty low grade deposits, epitimized by the massive expansion to extract tar sands oil as seen in Canada and the Congo.[33] Commercial banks are often key financiers of these investments and as such co-responsible for creating a potentially lethal reserve of recoverable reserves.[34] If banks are to play a positive role in facilitating a transition to a low carbon economy, they must immediately end their support for new oil, coal and gas extraction and associated delivery projects such as pipelines and loading stations.

End support for new coal-fired power plants

A robust climate policy must specifically address the problem of coal. Coal is by far the most carbon-intensive fossil fuel, containing over 70 percent more carbon per unit of energy than natural gas (excluding liquid natural gas lifecycle emissions). Coal combustion produces 38 percent of global electricity output, but is responsible for 72 percent of global power sector emissions.[35] Unfortunately, because coal is abundant and most of its severe social and environmental costs are externalized,[36] hundreds of new coal power plants are currently on the drawing board or under construction, with China, India, and the United States leading the way.[37]

Yet, every plausible global GHG emission reduction strategy includes a dramatic reduction in reliance on coal. This must start now, as a new coal-fired power plant typically has a 'useful' lifetime of 50 years or more. As with fossil fuel exploration, the climate policy of a bank must state that the bank will immediately terminate its support for coal power plants.

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[31] M. Meinshausen, N. Meinshausen, W. Hare, S. Raper, K. Frieler, R. Knutti, D. Frame, & M. Allen, Greenhouse-gas emission targets for limiting global warming to 2°C, Nature, April 2009

[32] J. Mouawad, "A Quest for Energy in the Globe's Remote Places," New York Times, (October 9, 2007).

[33] http://ran.org/campaigns/freedom_from_oil/spotlight/tar_sands/learn_more/; http://www.banktrack.org/manage/ems_files/dlforce/energy_futures_/Energy_Futures_eng.pdf

[34] See also www.banktrack.org climate section

[35] UNFCC Background Paper on Analysis of existing and planned investment and financial flows relevant to the development of effective and appropriate international response to climate change. Downloaded August 24, 2007 http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/background_paper.pdf

[36] National Research Council (2009), Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use. http://www.nap.edu/catalog.php?record_id=12794

[37] Mark Clayton, "New Coal Plants Bury 'Kyoto'", Christian Science Monitor, December 23, 2004. http://www.csmonitor.com/2004/1223/p01s04-sten.html

End support for most harmful practices in other GHG-intensive sectors

While the burning of fossil fuels currently produces the lion's share of the world's GHG pollution, other activities and economic sectors also cause significant climate impacts. Banks should take climate impacts into account when they support activities in these sectors, and should end their support for the highest impact activities. In addition to energy production and its use in various sectors including transport, greenhouse gas intensive activities and sectors that require particular consideration include: industrial processes such as iron, steel, aluminium, cement and urea production; the use of various solvents; land use and land use change including agriculture and forestry; and waste management. Below we present perspectives on forestry, agriculture and transport:

Deforestation/forestry

Deforestation and forest degradation is a critical driver of climate change. The burning and clearing of natural forests around the world contributes about 15-20 percent of global GHG emissions each year --more than for example the entire transport sector.[38] As a result of their high deforestation rates, Indonesia and Brazil are the 3rd and 4th largest producers of GHG pollution respectively after China and the U.S. Deforestation in the Amazon alone accounts for over half of Brazil's national emissions,[39] In Indonesia, tropical deforestation and associated peatland degradation accounts for 80% of its national emissions.[40] In addition to producing emissions, deforestation also eliminates critical carbon sink capacity, which further amplifies the climate impacts of deforestation.[41]

Deforestation is driven by different forces in different areas. In Indonesia, peat swamp forests have been deforested for conversion to pulp and oil palm plantations. Annual emissions from draining peat forests are enormous, and far exceed the already large emissions from the loss of the above ground biomass in the rainforest.[42] In Brazil, cattle raising and soya cultivation are the main drivers of deforestation.

Ironically, expanded biofuel production is also a major driver of deforestation. When the CO2 emissions of indirect land use change are included in biofuel carbon budgets, ethanol and biodiesel fuels often lead to higher GHG emissions than the fuels they seek to substitute for.[43]

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[38] Nicholas Stern (2007), Stern Review: The Economics of Climate Change, Summary of Conclusions.

[39] Valor Economico, "Pecuária gera 44% das emissões" August 27th, 2009. available at http://www.amazonia.org.br/noticias/noticia.cfm?id=325215

[40] http://www.eastasiaforum.org/2009/10/05/indonesia-cutting-emissions-by-up-to-41-per-cent-how/, http://www.thejakartapost.com/news/2009/10/27/road-copenhagen-helping-indonesia-advance-its-emissions-decrease.html

[41] Intergovernmental Panel on Climate Change, Fourth Assessment Report: *Working Group III Report:* Mitigation of Climate Change, at 544 (2007).

[42] http://www.wldelft.nl/cons/area/rbm/PEAT-CO2.pdf http://www.amazonia.org.br/noticias/noticia.cfm?id=325215BBC Online, "Brazil in top ten for greenhouse gas emissions" 22 July 2004. Available at http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=1508&language=1

[43] Thus, biodiesel from soya grown on cleared Brazilian rainforest land would take 319 years to have a positive carbon balance when one includes the carbon emissions from burning and clearing the rainforest. Fargione,

Because of this large impact banks should decline to finance any investment that directly or indirectly causes deforestation and forest degradation. Industrial logging in intact forests should be excluded from financing as this contributes significantly to degradation and reduces the resilience of these particularly important carbon stores to adapt to climate change[44]. On the same basis, banks should not finance the conversion of natural forests to pulp or agricultural plantations, or their clearing for other purposes.

Agriculture and food production

Agriculture accounts for about 10-12 percent of global GHG emissions.[45] In addition, livestock is responsible for another 18 percent of anthropogenic emissions when deforestation, land-use change, methane production, and other emissions are included.[46] Any strategy to combat climate change must also focus on the impact of large scale agriculture, particularly meat production, while securing the right to food for all. The development of an export-oriented agricultural sector is necessarily accompanied by the development of a transport infrastructure of roads, railways and waterways, which also has strong impacts on ecosystems and the climate. Therefore, financing decisions regarding export-oriented agriculture should not be made in isolation, but be assessed with due regard to impacts in the wider ecosphere.

Accordingly, banks should refuse to finance the most GHG-intensive food production processes and practices, and foster less impacting alternatives such as organic methods of food production aimed at local markets. Cattle ranching should not be financed in forest areas and elsewhere only in association with recuperation of degraded areas.

Transportation

Transportation is responsible for 23 percent of global energy-related GHG pollution, and its GHG emissions were increasing at a faster rate than any other energy consuming sector.[47] Since trains, planes, trucks and cars are durable assets that remain in service for decades, it is imperative that the transportation sector quickly improve its energy efficiency. Banks should avoid financing the most energy intensive transportation options where sustainable alternatives exist or can be developed, and proactively seek to finance those more efficient transportation solutions and public transportation systems.[48]

Joseph, et al. "Land Clearing and the Biofuel Carbon Debt." *Science* 319 (5867) (2008): 1235-1238.

[44] Moreover, mechanisms like REDD (Reduced Emissions from Deforestation and forest Degradation) are included in current international climate negotiations. The mechanism is still being discussed, and there are certain principles that must be met for an effective REDD which include, but are not limited to: recognition and respect of the rights, territories and customary tenures of Indigenous peoples and forest-dependent communities including the right to free prior and informed consent; addressing underlying drivers of deforestation including market demand; strengthened forest governance to address corruption and illegal forest activities; ensuring delivery of benefits to communities at the local level; strong biodiversity and social safeguards; and distinguishing between natural forests and plantations and stopping conversion of natural forests to plantations.

[45] Intergovernmental Panel on Climate Change, Fourth Assessment Report: *Working Group III Report:* Mitigation of Climate Change, at 499 (2007).

[46] United Nations Food and Agriculture Organization,2006. Livestock's Long Shadow. http://www.virtualcentre.org/en/library/key_pub/longshad/A0701E00.pdf

[47] Intergovernmental Panel on Climate Change, Fourth Assessment Report: *Working Group III Report:* Mitigation of Climate Change, at 325 (2007).

[48] http://www.nytimes.com/2007/11/04/opinion/04friedman.html?_r=1&oref=slogin ;

3.2 Reducing the climate impact of all lending and investments

In addition to ending support for the most climate-destructive activities, banks must also adopt policies that ensure that their remaining portfolios impact on climate change is drastically reduced. They should:

Measure and report GHG emissions associated with all financial services

The accurate public accounting of climate impact is essential for managing and reducing GHG pollution in a transparent and accountable manner. Most banks are already measuring their own direct carbon footprint. Some banks have taken steps to operate entirely carbon neutral. Yet to fully account for their climate footprint, banks should also measure and report on the emissions associated with the financial services they provide to their clients, the so called "financed emissions". Such accounting should be done on both a business-unit and portfolio-wide basis to enable stringent target setting and more effective management of climate impacts.[49]

The accepted standard for accounting, measuring and reporting on direct and indirect GHG emissions is the Greenhouse Gas Protocol (GHG Protocol). The GHG Protocol is consistent with the guidelines issued by the IPCC for reporting on emissions at a national level.[50] Newer methodologies are also available that apply the GHG Protocol to financial institutions.[51]

In addition to reporting on their own financed emissions, banks should require all their clients that produce significant quantities of greenhouse gases to use the GHG Protocol accounting and reporting procedures as a condition of financing. In so doing, banks can build upon the work of the Carbon Disclosure Project, a coalition of large institutional investors that asks the world's largest companies to report on their GHG pollution and other climate-related information. Over 2.500 corporations currently report on their emissions on the CDP website.[52] Similarly, the newly established Forest Footprint Disclosure Project is working with companies to assess and address the impacts on forests from their supply chains on five major commodity drivers of deforestation and forest degradation – forest products, soya, oil palm, biofuels and cattle – and can be useful tool when working with relevant clients.[53]

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http://www.gdrc.org/uem/sustran/sustran-principles.html ; http://www.vtpi.org/wellmeas.pdf

[49] Bank of America, for example, assesses and reports on greenhouse gas emissions from its energy and utilities portfolio. This is a useful start, but at a minimum should be extended to other GHG intensive sectors such as transportation, manufacturing and agriculture, and to overall portfolio impacts. Bank of America Climate Change Position, www.bankofamerica.com/environment/index.cfm?template=env_clichangepos

[50] The GHG Protocol, developed by the World Resources Institute and the World Business Council for Sustainable Development, has already been adopted by a number of companies. In accordance with this protocol, Banks should report the emissions resulting from their loan and investment products as Scope 3 emissions. Website GHG Protocol (www.ghgprotocol.org), Viewed in May 2007.

[51] World Resources Institute, (2009) Accounting for Risk: Conceptualizing a Robust Greenhouse Gas Inventory for Financial Institutionshttp://www.wri.org/publication/accounting-for-risk

[52] http://www.cdproject.net/

[53] http://www.forestdisclosure.com/

Establish ambitious portfolio and business-unit reduction targets

Measuring financed emissions is only a first step; the next logical step is for every bank to establish sufficiently ambitious reduction targets for their financed emissions. GHG pollution reduction targets are fast becoming standard practice in many industries.[54] While many companies have used the Kyoto Protocol benchmarks as a corporate target (on average 5.2 per cent from 1990 levels by 2012), it is clear that to continue to use Kyoto-scale emissions reductions will not be sufficient to keep climate change below 2°C above pre-industrial levels. To achieve the dramatic emission reductions associated with reaching this level it is imperative that short- and medium-term reduction targets of companies and banks are sufficiently ambitious to make substantial progress.

Some financial institutions have already adopted both portfolio and business-unit reduction targets beyond Kyoto levels. For example, the United States Overseas Private Investment Corporation (OPIC) has pledged to adopt an annual emissions cap and to reduce GHG pollution in its portfolio of projects by 30 percent in the next ten years.[55] All banks should establish similar annual reduction targets to ensure progress towards longer-term stringent reduction objectives.[56] In order to be able to compare reduction targets within the banking sector, banks, in conjunction with their clients, NGOs, and other stakeholders should develop common standards for allocating responsibility for financed emissions to the various financial institutions supporting that operation.[57]

Develop management tools to deal with climate issues

Banks should develop and implement appropriate tools to ensure that they meet or exceed their stated emission reduction targets, and to help transmit best climate practices to their customers and clients. Climate management tools should be no less rigorous than the kinds of management tools and oversight mechanisms banks already use to ensure compliance with other corporate policies and strategic objectives, such as their credit rating and risk management frameworks or their human resources policies. They must also include mechanisms to align staff and management incentives with corporate emission reduction objectives

These tools should be differentiated for all segments of the banks' operations and services, including market research; asset management; retail, corporate and investment banking; project finance and insurance.[58] For example, banks should develop

[54] See for example WWF Climate Savers www.wwfus.org/climate/projects/climatesavers/companies.cfm

[55] www.opic.gov. in 2007, Bank of America committed to reduce the GHG emissions of its energy and utilities portfolio by seven percent by 2009. Bank of America Climate Change Position, www.bankofamerica.com/environment/index.cfm?template=env_clichangepos

[56] These reduction targets should be defined in absolute terms. However, intensity targets may also be a useful indicator of performance in certain circumstances. For example, energy efficiency improvements in commercial real estate divisions may be better expressed in terms of CO_2/m2 of financed projects than in overall emissions from financed projects.

[57] World Resources Institute, (2009) Accounting for Risk: Conceptualizing a Robust Greenhouse Gas Inventory for Financial Institutionshttp://www.wri.org/publication/accounting-for-risk

[58] Some banks are beginning to become more sophisticated in their management of climate issues. For example, JP Morgan Chase has committed to "quantify the financial cost of greenhouse gas emissions and integrate them into financial analysis" of power sector projects, and has stated that "[i]nternalizing the cost of carbon in this way may alter [its] investment choices..." (JP Morgan Chase, Environmental Policy

refined climate risk assessment tools that are tailored to each business line; emissions or efficiency requirements for all commercial real estate and project- and corporate finance clients; and methodologies for assigning a "shadow price" for every ton of carbon emitted from transactions that are not subject to GHG caps, so that the price can be incorporated into loan pricing.

Critically, the climate management tools must address the risks that investments and services will contribute to climate instability, or will impede the ability of societies to mitigate or adapt to the effect of climate change. They can not just focus on the business risks posed to the bank or its clients by climate change and the anticipated regulatory responses. Indeed, these business risks should already be considered in the ordinary exercise of prudent business practice and existing fiduciary duties. To take one example, a business-risk analysis of carbon offsets markets may identify attractive business opportunities in carbon trading, even if the offsets being traded are of dubious quality and would actually result in increased global GHG pollution.[59]

3.3 Finance the transition to a low/no carbon economy

Substantial new investments in energy efficiency and renewable energy will be required to sufficiently *decarbonize* the energy sector to meet science-based emissions reduction targets. According to one estimate, about $100 billion must be invested in renewable energy production *each year* through 2030 to meet these targets.[60]

While investment in renewable energy, energy efficiency and 'clean tech' sectors is currently undergoing dynamic growth, such investment remains small in comparison with investment in incumbent energy technologies. There is enormous potential for renewable energy to meet energy needs and corresponding business opportunities for investors to tap into. One recent analysis of the deployment potential of renewable energies found that the 20 largest economies could produce at least half of their electricity generation through renewable sources by 2050. In countries such as Australia, Brazil, Canada, it could be up to 90%.[61]

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http://www.jpmorganchase.com/cm/cs?pagename=Chase/Href&urlname=jpmc/community/env/policy/clim). Bank of America has similarly committed to "evaluate the level of financial sector risk through the finance of GHG emission intensive industries." (Bank of America Climate Change Position, www.bankofamerica.com/environment/index.cfm?template=env_clichangepos). Others are beginning to integrate climate and carbon risk assessments into their equity analysis and investment advisory services. For example, a Citigroup analyst recently cited the extreme regulatory risks facing the coal industry in downgrading U.S. coal company stocks. (Reuters, "Greens rejoice as analyst sours on U.S. coal, July 20, 2007 http://www.alertnet.org/thenews/newsdesk/N2089702.htm).

[59] Currently, weak standards and unscrupulous practices have eroded public confidence in voluntary offset markets. For this reason, a coalition of leading banks has proposed a verification system in which consumer credits would only qualify if emissions have already been reduced and are additional, measurable, verifiable, and permanent. International Herald Tribune, Banks Seek Tougher Carbon Trading Standards, June 28, 2007.

[60] A.R. Ballesteros, J. Coequyt, et al (2007), Futu[r]e Investment: A Sustainable Investment Plan for the Power Sector to Save the Climate, at 10 (European Renewable Energy Council and Greenpeace International).

[61] Renewable energy Policy Network release November 29 2007 http://www.ren21.net/atStake/forum.asp?id=1

Banks, while retreating from fossil fuel based energy generation must simultaneously lead the way in developing innovative financing solutions to facilitate investment in clean energy and energy efficiency technologies and projects. In particular, while efforts are being made to upscale renewable energy projects banks may also need to develop new financing tools to accommodate the smaller scale, decentralised generation and efficiency initiatives that will likely be more prevalent in a low/no carbon economy.

Increase support for emission reduction, renewable energy and energy efficiency

Banks should develop a proactive strategy for investing in renewable energy and energy efficiency programs and projects. Just as banks may once have promoted themselves as 'Oil & Gas Bank'[62] and historically built much of their business on providing capital to exploit fossil fuel reserves, banks should now vigorously compete to become the bank of choice for the clean-tech, renewable energy, and energy efficiency industries. In the coming decades, projects in these areas are expected to need trillions of dollars in investment capital.[63] Clearly, those banks that are first to develop a keen understanding of these industries and cultivate durable relationships with key players will enjoy significant competitive advantages as these industries mature.[64]

Of course, not all energy solutions that are marketed as climate-friendly or sustainable actually merit those appellations. Banks should focus on financing the best long-term energy options, including energy efficiency, solar, and wind. They should be more circumspect about supporting technologies that may have more mixed impacts such as biomass and biofuel, or may only be valuable as transitional, short-term solutions, such as natural gas power plants. Banks should refrain altogether from supporting projects such as nuclear power plants and large dams whose environmental and social risks, dependence on public subsidies for economic viability, and (in the case of large dams), potentially adverse climate impacts make them 'false solutions', even in a climate constrained world. The annex to this paper provides an overview of such 'solutions' and 'false solutions'.

Develop climate-positive retail products and services

Banks should also develop a range of climate-sensitive products and services for their retail clients. These may include programs to help consumers purchase more energy-efficient homes and appliances, and to invest their deposits in climate-positive ways.[65]

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[62] Slogan of the Royal Bank of Scotland. RBS recently dropped this marketing slogan after intense campaigning by groups such as Platform.

[63] International Energy Agency (2009). "How the Energy Sector Can Deliver on a Climate Agreement in Copenhagen".

[64] Towards this end, Citi recently announced that it will provide $3.1 billion a year over the next 10 years in financing and investment to support the commercialization and growth of alternative energy and clean technology. However, to put this in perspective, Citi had $63 billion of its corporate credit portfolio allocated to the utilities and petroleum sectors in 2006.
http://www.citigroup.com/citigroup/environment/data/climatechange.htm,
http://www.citigroup.com/citigroup/fin/data/k06c.pdf

[65] For example, in France, the Caisse d'Epargne bank uses a sustainability label for savings products that allows consumers to compare passbook savings accounts, mutual funds and life insurance offerings on the basis of the impact on the climate of the activities financed with the products, among other criteria.

For example, banks should expand the availability of consumer products that promote energy efficiency, such as "location efficient" and "energy efficient" mortgages.[66] A number of European banks already offer lower mortgage rates on homes that meet certain energy efficiency standards,[67] or "eco-loans" that offer discounted rates for loans for renovation, insulation and other energy efficiency work.[68] Other banks have created financing programs to help home owners install solar power systems, and to purchase more energy efficient homes.[69] Banks should also create and actively promote savings and investment instruments that invest in such mortgages, or in other renewable energy and energy savings initiatives.

Commercial real estate

Commercial real estate is a major business line for many banks, and one of the most promising sectors for achieving substantial GHG reductions through energy efficiency. According to the IPCC, significant reductions in emissions from energy use in buildings can be achieved using mature technologies, and a large percentage of these savings can be achieved in ways that have a net positive return on investment.[70] In fact, McKinsey has found that building-related efficiency improvements offer some of the largest and most profitable abatement opportunities.[71] Consequently, a failure to thoroughly and swiftly decarbonise the construction industry will lock in energy inefficiency for decades to come.

To help ensure that these opportunities are captured as soon as possible, banks should require their commercial real estate clients to meet rigorous efficiency benchmarks, and should work with clients to structure investments to improve energy efficiency.[72]

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http://www.utopies.com/docs/Methodologie-Generale-Juin2008-GB.pdf

[66] Location efficient mortgages increases the amount that urban homebuyers are able to borrower by taking into account the money that they can save on transportation costs. See, http://www.nrdc.org/cities/smartGrowth/qlem.asp. Similarly, energy efficient mortgages make it easier for borrowers to qualify to purchase homes with specific energy efficient improvements. See, http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.energy_efficient_mortgage

[67] http://www.konsuminfo.ch/pdf/16460.pdf

[68] http://www.ademe.fr/internet/EcoPrets/

[69] http://www.citigroup.com/citigroup/environment/data/climatechange.htm; JP Morgan Chase, Environmental Policy http://www.jpmorganchase.com/cm/cs?pagename=Chase/Href&urlname=jpmc/community/env/policy/clim

[70] Intergovernmental Panel on Climate Change, Fourth Assessment Report: *Working Group III Report:* Mitigation of Climate Change, at 391 (2007).

[71] McKinsey Global Institute (2008). The Carbon Productivity Challenge: Curbing Climate Change and Sustaining Economic Growth

[72] An example of a useful set of targets is those of Architecture 2030, which call for fossil fuel reduction standards in new construction starting at 50 percent below regional averages for comparable building types, and rising over time. http://architecture2030.com/home.html

4. Conclusion

Runaway climate change is starting to influence every persons life and every business activity. It will take a almost super human effort to still turn the tide around and stabilize world climate within the temperature range that is considered relatively safe.

Given this, commercial banks stand at a crossroad; they can choose to be part of the grand coalition of citizens, governments and business that is gearing up to meet the climate challenge with the determination and vigor that is required, throwing in their unique ability to mobilize capital on the scale needed to achieve the global switch to a low carbon economy within our lifetime. Or they can choose to ignore the popular demand for drastic choices and continue to be the financiers of yesterdays fossil fuel based economy. Doing so may well lead to a fatal tarnishing of a banks reputation as a knowing climate destroyer.

There is little time left for banks to ponder which direction to take.

Annex I. Energy alternatives and sustainability

Many energy sources are currently being presented to policy-makers and the public as climate-friendly alternatives to fossil fuels. It is encouraging that a real breakthrough to achieve a low carbon economy would require not so much a complete new, and as of yet unidentified energy technology, as well as a sufficient large application of techniques that are already available. But not all of the options offer the significant climate benefits that are claimed. Moreover, some 'alternatives' have such profound environmental and social costs that their climate benefits would be more than offset by the problems that they create in other areas.

This annex provides a brief overview of genuine candidates to fuel a low/no carbon economy as well as a list of options that merely provide 'false solutions' and therefore should not feature in a banks energy portfolio.

4.1 Solutions

Energy efficiency

Energy is not a commodity that is desirable for its own sake. Rather, we value energy for the services it provides, such as lighting and heating our houses or moving us from place to place. In many cases, energy services can be provided far more efficiently than is currently the case. Indeed, end-use energy efficiency improvements are often the easiest, least expensive and greenest way to meet the demand for energy services. To a surprising degree, efficiency gains can be realized at very high financial rates of return.[73] According to McKinsey & Co, a significant percentage of the GHG pollution abatement needed to stay below 2°C can be achieved through investments in energy efficiency with internal rates of return greater than 10 percent.[74]

Wind power

The theoretical potential of wind energy is staggering; estimates are that wind generated power could provide up to six times current global electricity consumption.[75] Wind energy has considerable advantages as a power source -it is carbon-free, clean, abundant, locally available, and scalable.

While wind was until recently considered to be a fringe source of energy, it has become a competitive and rapidly expanding global industry. Generation costs have fallen by 50 percent over the past 15 years, and now approach the costs of conventional sources. Over the past ten years, global wind power capacity has grown at a rate of over 28 percent per annum. By 2010, the global installed wind capacity is expected to more than double its 2006 capacity.[76]

[73] David. B. Goldstein, Saving Energy, Growing Jobs: How Environmental Protection Promotes Economic Growth, Profitability, Innovation and Competition, 6-7 (2007).
[74] McKinsey and Company. Curbing Global Energy Demand: The energy productivity opportunity. May 2007,
[75] McKinsey and Company. Curbing Global Energy Demand: The energy productivity opportunity. May 2007,
[76] Global Wind Energy Council, Global Wind 2006 Report. http://www.gwec.net/uploads/media/gwec-

Solar power

Solar power is fast becoming a mainstream source of power. Solar photovoltaic power has enormous potential for on-site residential and commercial applications and for meeting peak demands on summer afternoons.[77] Grid-connected solar photovoltaic grew by 60 percent per year from 2000 to 2004, and the solar PV industry invested record amounts in new plant and equipment (about $6 billion) in 2005. The PV industry is expected to continue to grow by more than 30 percent annually over the next several years.

In addition, concentrating Solar Thermal (CST) systems, which use lenses or mirrors to focus sunlight into a small beam, can provide baseload power on an industrial scale. It is estimated that concentrating solar power could meet up to 7 percent of the world's power needs by 2030 and fully one quarter by 2050.[78]

In its most straightforward application, such as with a large scale introduction of solar cookers in tropical rural areas it could provide the perfect replacement for firewood and other sources of fuel, the use of which is both a threat to human health and to the climate. In specific areas with an abundance of sunshine, photovoltaic power (PV) may also provide energy to communities unconnected to the power grid. The business challenge here is to both scale up these projects so that they become feasible for banks to finance and for banks to scale down so that they are able to deal with this demand for finance.

Small hydro

Small hydro (usually understood as a hydro scheme with a capacity below 10MW and a limited physical impact on the flow of the river) can be environmentally and socially low-impact and provide a welcome addition to the range of locally available energy options. However, in certain cases small hydro can replicate many of the negative effects of large hydro schemes. To ensure that small hydro schemes have low impacts and meet community priorities it is imperative that, just as large hydro schemes, they be developed only after a comprehensive options assessment and in consultation with local populations.

Experimental energy technology

Lately, a number of exciting energy technologies are being developed and tested. Some examples of such technologies are wave energy[79], energy kite technology,[80], advanced non-conventional biomass systems and various approaches to geothermal heating and subterranean energy storage. These technologies are, or may soon add to the range of investment options for main stream financiers but their further development would benefit tremendously from increased access to venture capital and support from innovative mainstream banks.

2006_final.pdf

[77] http://www.environmentcalifornia.org/energy/million-solar-roofs/fact-sheet

[78] Greenpeace International, Concentrating Solar Power Outlook 2009: Why Renewable Energy is Hot (2009)

[79] http://www.pelamiswave.com/

[80] http://www.ockels.nl/

Biomass

Biomass in this context refers to biodegradable parts of products that are derived from waste and residue originating from living matter that can be burnt as fuel or otherwise used for energy generation. The potential climate benefits of biomass use depend on whether they actually replace previous fossil fuel consumption, how they are sourced and produced and on where and how they are being used.

Biomass use on a small scale in the developing world may have the potential to provide affordable, home grown, environmentally sustainable bio-power. Depending on local circumstances (local availability, transport, guarantees for local producers etc) the use of agricultural residues, organic waste (for example used timber) or even purpose grown crops may be a viable option for sustainable energy generation. As with other small scale energy options the business challenge here is for banks to create the financial products that will meet the needs of potential small scale producers.

4.2 False Solutions

Carbon trading

Carbon trading may pose lucrative business opportunities, but in general carbon trading is a dangerous distraction for banks seeking to make a positive contribution to solving the climate crisis. Banks can play a much more valuable role by capitalizing new climate-friendly enterprises and curbing financing for greenhouse gas intensive activities.

In theory, one of the strengths of carbon trading is that it gives companies flexibility to meeting GHG reduction targets, and that that market forces efficiently identify the cheapest emissions cuts. However, this dynamic incentivizes businesses to make cheap cuts and delays the significant investments necessary to transition to a low-carbon economy. In addition, carbon trading crowds out other strategies to reduce GHGs; for example, the UK government feared that adopting a 20% renewable portfolio standard (requiring electric utilities to source 20% of their electricity from renewable energy sources) would bring down the price of carbon and harm the European Union Emissions Trading Scheme (EU ETS).[81]

But in practice, carbon trading is much worse. The world's largest carbon trading program, the EU ETS, has not reduced emissions to the extent promised. Political lobbying has resulted in polluters receiving massive amounts of emissions allowances for free, and also in the over-allocation of allowances. The widespread use of offsets, especially from Clean Development Mechanism (CDM) projects, has also undermined the integrity of carbon caps in developed countries and has delayed the transition to a clean economy. Numerous studies have demonstrated that many CDM offsets are not additional, resulting in business-as-usual emissions levels while providing the appearance of mitigation.

[81] Seager, Ashley and Mark Milner, "Revealed: cover-up plan on energy target," *The Guardian,* 13 Aug 2007 at http://www.guardian.co.uk/environment/2007/aug/13/renewableenergy.energy

In the context of international climate negotiations, the debate over carbon trading and the role of private finance has taken a particularly insidious turn. Several developed countries, including the United States and the EU, are attempting to shirk their financial obligations to provide public financing to developing countries for climate change adaptation and mitigation. Instead, the US and its allies argue that private financing from carbon offset schemes, such as the UN Clean Development Mechanism, should count towards their financial obligations under the under the United Nations Framework Convention on Climate Change and the Bali Action Plan.

Double-counting offsets as both international climate finance obligations and developed countries' emissions reductions flies against the spirit and letter of the UNFCCC. Banks' enthusiasm for carbon trading therefore is highly unconstructive in the context of international negotiations. It undermines efforts to ensure that the world's poorest people receive a sustainable and equitable outcome from the Copenhagen process and threatens the viability of a global climate deal.

Other sources of finance for adaptation and mitigation in the Global South are urgently needed, however. According to the UNFCCC, some USD 150 billion per year in public finance will be needed over the next decade to meet developing countries' mitigation and adaptation needs, and this funding should be met through governmental channels.[82] Trillions of dollars worth of private financing will also be needed to capitalize energy efficiency measures and renewable energy infrastructure in the Global South, but banks should directly capitalize such investments, not focus their attention on brokering and trading carbon derivatives.

Nuclear energy

Globally, nuclear energy currently provides about 370 gigawatt of power, or about 16 percent of the world's electricity supply. Nuclear power is intensely controversial and generally uncompetitive without massive public subsidies. Nevertheless, because nuclear power produces relatively low carbon emissions, some have come to reconsider nuclear power as an attractive option for large-scale energy production in an increasingly carbon-constrained world. The supposed climate benefits of nuclear power, however, are more than offset by its unacceptable economic, environmental and social costs. These include:

Costs Nuclear energy is very expensive and therefore not a cost-effective solution to climate change. This is especially true when the full costs of storing radioactive waste, insuring against catastrophic failure, decommissioning reactors, and securing materials and technology to prevent proliferation are fully internalised. Indeed, nuclear energy is rarely viable in competitive energy markets without significant public subsidies.

[82] According to the UNFCCC, some USD 150 billion per year in public finance will be needed over the next decade to meet developing countries' mitigation and adaptation needs, and to build enabling environments for private investment. The United Nations Framework Convention on Climate Change, "Investment & Financial Plans to Address Climate Change, Executive Summary." See: http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/executive_summary.pdf

Investment in end-use energy efficiency can produce 2-10 times as much reduction in GHG pollution per unit spent as investing in new nuclear energy production.[83]

Danger Nuclear power is dangerous. There is the risk of an accidental radioactive release such as occurred at Chernobyl and Three Mile Island. The nuclear industry also heightens the dangers of nuclear proliferation and terrorism. Civilian nuclear power production helps facilitate weapons proliferation by creating and legitimizing a global trade in dual use technologies that can be used in the production of nuclear weaponry. It is also a potential source of the raw materials for nuclear terrorism.[84]

Waste There is no adequate long-term solution for the storage of nuclear waste. Even after nearly fifty years of experience with commercial nuclear power, good long-term disposal options are still non-existent. Many facilities continue to store their nuclear waste on-site until a more suitable long-term solution can be developed.

Speed Due to the complexities of siting and contruction, a new nuclear power plant is likely to take more than a decade to bring online. This is far too slow to help begin to bend global GHG emissions trends downward. Smaller-scale non nuclear solutions can be brought online much faster, and far more efficiently than nuclear facilities.[85]

Large-scale hydro

Hydropower is often assumed to be a source of power that emits virtually no GHGs. However, there is a growing body of evidence that the rotting of organic material in large tropical reservoirs is a globally significant emitter of carbon dioxide and methane. One recent study found that the world's 52,000 large dams may release 104 million metric tonnes of methane each year -the largest single source of human-caused methane emissions- and contribute more than 4 percent of the total warming impact of human activities.[86] Because of the uncertain risks of emissions from reservoirs, the Executive Board of the UN Framework Convention on Climate Change's (UNFCCC) Clean Development Mechanism (CDM) has excluded hydropower projects with significant water storage from eligibility for CDM financing.[87]

In addition, large hydropower projects are often beset by profound environmental, social, and economic problems. Large dams have displaced between 40 and 80 million people worldwide. Millions more have been ousted by the construction of canals, powerhouses and other associated infrastructure.[88] Many of these people have not been

[83] Amory Lovins, Nuclear Power and Climate Change, http://www.rmi.org/images/PDFs/Climate/C07-09_NuclearPwrandClimate.pdf, (August 27, 2007).
[84] William Langewiesche, The Atomic Bazaar: The Rise of the Nuclear Poor (2007).
[85] Amory B. Lovins, Imran Sheikh, and Alex Markevich (2008) Forget Nuclear (Rocky Mountain Institute).
[86] Ivan B.T. Lima et al. (2007) "Methane Emissions from Large Dams as Renewable Energy Resources: A Developing Nation Perspective," Mitigation and Adaptation Strategies for Global Change, published on-line March 2007.
[87] Intergovernmental Panel on Climate Change (2007), Fourth Assessment Report: *Working Group III Report:* Mitigation of Climate Change, at 274.
[88] World Commission on Dams, Dams and Development: A New Framework for Decision-making, www.dams.org at 104 (2000).

satisfactorily resettled or been given adequate compensation, and those who have been resettled have rarely had their livelihoods restored.[89]

With respect to the environment, dams have fragmented and stilled 60 per cent of the world's rivers, leading to profound and often irreversible impacts on riverine and adjoining terrestrial environments.[90]

Meanwhile, the economic benefits of large dams have often been elusive. Large dams tend to under-perform their targets for power generation, and lengthy construction delays and large cost overruns are routine.[91] Moreover, a changing climate could drastically impact the performance and safety of large dams. Increases in the severity and frequency of droughts will reduce hydropower production and water storage. Conversely, higher peak floods could threaten dam safety and increase reservoir sedimentation. As rainfall and runoff trends increasingly diverge from historical patterns, uncertainties in feasibility, impacts, and economic assessments for future dams will only increase.

Biofuels

Agrofuels (often called biofuels) are liquid fuels, notably bio diesel and bio ethanol. So-called first generation agrofuels are derived from food crops such as cereals, soybean, rapeseed oil, sugar cane and palm oil. Second generation agrofuels, currently under development, are aimed at using agricultural residues, trees (willow, eucalyptus) and straw, and may involve industrial technologies such as genetically modified micro organisms, crops and trees. Both generations are intended to provide fuel on an industrial scale for electricity production and transportation.

The potential climate benefits of biofuels critically depends on the scale of their use and whether they actually replace previous fossil fuel consumption, how they are sourced and produced, whether they displace agricultural activity elsewhere and on where and how they are being used. For example. the conversion of rainforests, peatlands, savannas, or grasslands to produce food-based biofuels in Brazil, Southeast Asia, and the United States can release 17 to 420 times more CO2 than the annual greenhouse gas (GHG) reductions these biofuels provide by displacing fossil fuels.[92]

Climate impacts aside, the rapid expansion of unsustainable, industrial scale monocultures for biofuel production has significant adverse social and environmental impacts. Recently, the use of food crops to produce biofuels helped to push the price of some staple crops to record levels, threatening food security for the poor in the Global South. In response, the UN special rapporteur on the right to food called biofuels production on arable lands a "crime against humanity," and recommended a five year ban on further investments.[93]

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[89] Ibid., at 17-18, 129.
[90] Ibid., at 73.
[91] Ibid., at xxxi.
[92] http://www.sciencemag.org/cgi/content/abstract/1152747v1
[93] http://news.bbc.co.uk/2/hi/americas/7065061.stm

Moreover, while a country like Brazil has an advanced sugar cane ethanol program, the sector is notorious for its appalling labor practices, with many examples of slave-like working conditions.[94] The increased cultivation of biomass crops in the form of monocultures also causes deforestation, soil erosion, loss of biodiversity and increased pesticide and fertilizer pollution.

Given the deep variation of the climate impact of biofuels and individual feedstocks, as well as of their environmental and social impacts, banks should condition any financing of biofuel production to an independently verified full lifecycle carbon balance, also taking into account indirect land use effects. Biofuel production should not be financed when this balance is below a demonstrable -80% lifecycle carbon balance compared to fossil fuels. Projects should also demonstrate that they do not compete with a more beneficial or necessary use of land by local communities and that there is no negative impact on food security.

Natural gas

Natural gas produces lower carbon pollution per unit of energy than coal or oil. Replacing coal with natural gas can therefore reduce short- and medium-term emissions, and buy more time to implement renewable solutions.[95] But the extraction, distribution and combustion of natural gas still causes significant GHG pollution, and the benefits of natural gas may be overstated when life-cycle emissions are considered.

For one thing, natural gas is primarily methane—a GHG that is 21 times more potent than carbon dioxide. As a result, even relatively small fugitive emissions throughout the gas life-cycle can significantly reduce the GHG benefits of gas.[96] For another, the lifecycle emissions of natural gas rise significantly when it is converted to liquefied natural gas (LNG). The liquefaction, transport, and re-gasification of natural gas can push lifecycle GHG emissions far closer to that of life-cycle GHG emissions from coal.[97]

Ultimately, long-term stabilization targets will not be reached if natural gas use is greatly expanded.[98] Therefore, liquid natural gas schemes should be avoided and other new gas fired plants should only be brought on line to replace coal, and should not be considered where they would impede or crowd out the development of renewable fuel sources.

Carbon capture and storage

Carbon capture and storage (CCS) is a process in which most of the CO_2 released from combustion in a fossil fuel power plant is captured and stored underground or in the oceans.

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[94] See for example the Pagrisa Dodgy deal at www.banktrack.org
[95] WWF (2007), Climate Solutions: WWF's Vision for 2050, at 14.
[96] WWF (2007), Climate Solutions: WWF's Vision for 2050, at 14.
[97] P. Jaramillo, W.M. Griffin, and H.S. Matthews (2007), Comparative Life-Cycle Air Emissions of Coal, Domestic Natural Gas, LNG and SNG for Electricity Generation.
[98] B. Hare, (1999) Fossil Fuels and Climate Change: The Carbon Logic, Greenpeace International, at 56; WWF (2007), Climate Solutions: WWF's Vision for 2050.

CCS has major problems. As of yet it is still in the research phase; the verdict is still out on whether it will become a viable technology able to capture the amount of GHG emissions predicted. More importantly, application of this technology may well provide a disincentive to limit conventional energy production en GHG emissions in the first place, further delaying the necessary switch to low/no carbon fuel sources. Given this uncertainty surrounding the future applicability of CCS and the continued lock in effect on fossil fuel use BankTrack considers CCS development a false solution that banks should abstain from financing.