July 19, 2017

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Sirs
Mauricio Macri
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Embajador Extraordinario y Plenipotenciario de la República Popular China en la República Argentina

Reference: Input for the Public Hearing to be held on July 20, in which the feasibility of constructing the hydroelectric complex "Néstor Kirchner-Jorge Cepernic" will be discussed

Dear Senators and Deputies,

Please accept a warm greeting on behalf of the signatories of this letter.

We write out of deep concern for the crossroads facing the Argentine people: protect the immeasurable ecological heritage of Patagonia, or jeopardize Chinese funding for a significant number of infrastructure and energy projects. We understand that this is not a minor issue, and we hope that the Argentine Congress will make use of the Public Hearing on July 20, not only to evaluate in depth the Kirchner-Cepernic Hydroelectric Complex (KCHC), but also to open up a fundamental conversation for Argentina and all of Latin America: on the development of a truly clean, sovereign, and efficient energy model.

We take this opportunity to share information on the negative impacts large dams have on the environment and economies of nations, as well as on affected communities; and on existing alternatives that can provide cheaper and more efficient energy. Argentina must not consider itself obliged to alter one of the last pristine areas on the planet, home of the last glacial river that runs freely from mountain peaks to the ocean.

There are currently many energy options that are better than hydroelectric dams. Argentina has the opportunity to be a pioneer in the development and implementation of these renewable energy technologies.[1] Worldwide clean energy trends demonstrate this: in 2015, the world added 63 GW of wind energy and 47 GW of solar energy, compared to just 22 GW of energy from large hydropower plants.[2] In some parts of the world, large dams are being dismantled in recognition that their costs outweigh their benefits;[3] and in others, private companies are discarding large dam projects because they are no longer viable or profitable.[4] Furthermore, the United States of America has decided, as a national policy, to oppose any loan, donation, strategy, or policy to support the construction of any large hydroelectric dam.[5]

Wind and solar energy are now economically competitive, faster to build and operate, and less vulnerable to a changing climate. In addition, the falling prices of battery storage, accompanied by innovations in smart grid technology, offers ways to resolve the problem of intermittent renewables without the need to construct new large dams.

Large hydropower dams are an obsolete technology. They are highly vulnerable to climate change (they can be paralyzed by droughts and may become dangerous in extreme weather events); worsen climate change by destroying carbon sinks and emitting gases from their reservoirs; harm biodiversity and local communities; cost a fortune; and take too long to become operational. Furthermore, the continued promotion of large dams by construction companies—as in the current case linked to Chinese funding—delays the implementation of available and necessary solutions towards the energy transition that our planet needs.

In the annex (attached), you will find scientific studies supporting the following arguments:

1. **Large dams are extremely costly to build and take far too long to become operational.** A recent study by Oxford University analyzed hundreds of dams across the world and concluded that, "Even without accounting for the negative social and environmental impacts, the actual costs of large dams are too high to generate positive returns." The study showed that budget estimates for building large dams are systematically lower than actual costs, and that, on average, dams end up costing twice as much as estimated.[6] Moreover, the study found that most large dams take longer to become operational than initially planned,[7] and their life span averages just 50 years.[8] Considering these costs, it's clear that large dams

[1] Argentina has exceptional wind power potential and could become the regional leader in this technology. About 60% of the Argentine territory has winds of 6 m/s and in several areas of Patagonia the speeds exceed 9 m/s. (5 m/s is considered sufficient to obtain positive investment returns). Renewable energy in Latin America: Argentina. Norton Rose Fulbright, 2016.

[2] Renewable Capacity Statistics. International Renewable Energy Agency, 2016.

[3] Dam removal and anadromous salmonid (Oncorhynchus spp.) conservation in California. Quiñones et al, 2014.

[4] DRP News Bulletin 10 July 2017 (Private Companies Exit Unviable Large Hydro Projects). South Asia Network on Dams, Rivers and People, 2017.

[5] Consolidated Appropriations Act. United States of America 2014.

[6] Should We Build More Large Dams? The Actual Costs of Hydropower Megaproject Development. Ansar et al, 2014.

[7] Ibid.

[8] Dam Removal Success Stories. Friends of the Earth, 1999.

increase public debt and intensify economic crises.[9] Therefore, large dams are the wrong technology to address the urgent energy crises facing our countries. The KCHC project does not consider the high voltage power line that would be needed to transfer the energy, which would increase foreseen costs.

2. **Large dams can gravely affect local communities.** The socio-environmental impacts of dams often result in serious human rights violations. Time and time again, communities bordering large dams are impoverished, as opposed to benefited, by such projects.[10] In addition to forced displacement and the criminalization of opponents, dams destroy valuable ecosystems, leading to health risks, the loss of work and food systems, the loss of traditional livelihoods, and damage to the ancestral land of indigenous peoples. As a result, communities become less resilient to climate change, are impoverished, and lose fundamental social networks, deeply altering their livelihoods and cultures.[11] In fact, by the year 2000, dams around the world had forcefully displaced between 40 and 80 million people.[12] It is estimated that, in total, they have negatively affected roughly 472 million people living downstream.[13] These damages have disproportionately fallen on indigenous peoples,[14] a harm that is all the more serious considering their close relationship with their land and natural resources.[15]

3. **Large hydroelectric dams can be dangerous.** Extreme weather events related to climate change, such as increased rainfall, can cause dams to fail, endangering the lives and property of people downstream.[16] The recent crisis in Oroville, California, demonstrates how dangerous this can be.[17]

4. **Large dams harm biodiversity.** By flooding land, cutting off migration routes, reducing river flows, and changing the nature of estuaries, dams are causing irreversible damage to ecosystems and the species that depend on them. The KCHC, for example, would put at risk of extinction the *Macá Tobiano*, an endemic bird categorized as "in danger of global extinction" by to the International Union for Conservation of Nature.[18] In fact, large dams are

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[9] Should We Build More Large Dams? The Actual Costs of Hydropower Megaproject Development. Ansar et al, 2014.

[10] Dams and Development. A new framework for decision-making. World Commission on Dams, 2000.

[11] Grandes Represas en América: ¿Peor el remedio que la enfermedad? Interamerican Association for the Defense of the Environment, 2009.

[12] Dams and Development. A new framework for decision-making. World Commission on Dams, 2000.

[13] The World Commission on Dams + 10: Revisiting the Large Dam Controversy. Moore et al, 2010.

[14] Dams and Development. A new framework for decision-making. World Commission on Dams, 2000.

[15] Caso Comunidad Indígena Yakye Axa Vs. Paraguay. Inter American Court of Human Rights, 2005.

[16] There have been multiple dam disasters linked to extreme weather events, such as the Ukai dam in India; Yaciretá in Argentina; Baixo Iguazú in Brazil; San Francisco and South Fork in the United States; and Malpasset in France, among others.

[17] A fault in the spillway of the dam, aggravated by high precipitation, led to the evacuation of 200,000 residents living downstream of the dam. Evacuations ordered over concerns at California dam system. Noticia CNN, 2017.

[18] The Environmental Impact Study itself highlights that the Toba Macá is already in the "threatened" category, which is prior to the irreversible category of global extinction. It also notes that the current information available is not sufficient to "make informed decisions about the conservation and the specific risks that the Toba Macá will face after the construction of the dams." Estudio de impacto ambiental de los aprovechamientos hidroeléctricos del río Santa Cruz presidente Dr. Néstor Carlos Kirchner y gobernador Jorge Cepernic. 2017.

the main cause of the degradation of aquatic and surrounding ecosystems.[19] At least 20 percent of the fish that inhabit these watersheds have disappeared or are in danger of doing so,[20] largely because of the dams.[21] Meanwhile, studies on the feasibility of the dams lack reliable information on the impact the dams and their reservoirs could have on nearby glaciers, including the Perito Moreno glaciar, a declared World Heritage Site By UNESCO.[22] All these impacts impair, at the same time, the ability of communities to adapt to a changing climate.

5. **Large hydroelectric dams are highly vulnerable to climate change.** Large dams are not flexible enough to withstand the changing climate of today's world. They have always been designed on the assumption that future river flow patterns will reflect those of the past, but this is no longer true. On one hand, extreme precipitation increases the siltation of dams, reducing their useful life and increasing the risk of dam failures and catastrophic floods. On the other hand, increasingly frequent droughts render them inefficient: many dams throughout the world are already losing efficiency, and this will only get worse as climate change intensifies.

6. **Large dams contribute to climate change:** A recent scientific study from the University of Waterloo and the Free University of Brussels warned that dam reservoirs are having significant impacts on the carbon cycle and the global climate system that, until now, have been unaccounted for.[23] In fact, reservoirs from large dams emit significant quantities of greenhouse gases, particularly methane, which is 30 times more potent than CO_2.[24]. A recent study from researchers at the University of Washington confirmed that methane emissions from large dams are much greater than previously thought, representing 1.3% of all man-made climate emissions—more than all of the emissions from Canada.[25] At the same time, the construction of large dams destroys carbon sinks, such as forests and rivers, which sequester carbon from the atmosphere. In reality, hydroelectric dams actually aggravate climate change, despite common portrayals of dams as green energy.

Finally, it's important to take into account how the Chinese government has pushed for the rapid resumption of the KCHC, under circumstances in which the Supreme Court of Argentina had suspended work. This pressure was recorded in the minute of the Meeting of the 3° China-Argentina Dialogue for Cooperation and Economic Coordination, which took place this past Abril. During the meeting, the Chinese side "firmly demanded" Argentina complete the environmental impact assessment of the KCHC and resume the project.[26] The aforementioned decision of the Supreme Court of Justice on December 21, 2016 ruled that the Executive Branch had not complied with the obligations imposed by the Law on Environmental Impact of

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[19] Dams and Development. A new framework for decision-making. World Commission on Dams, 2000.
[20] Watersheds of the world: ecological value and vulnerability. World Resource Institute, 2003.
[21] Extinction debt on reservoir land-bridge islands. Jones et al, 2016.
[22] Parque Nacional Los Glaciares. UNESCO sites.
[23] Global perturbation of organic carbon cycling by river damming. Maavara et al, 2017.
[24] A more potent greenhouse gas than carbon dioxide, methane emissions will leap as Earth warms. Princeton University, 2014.
[25] Greenhouse Gas Emissions from Reservoir Water Surfaces: A New Global Synthesis. Deemer et al, 2016.
[26] Minute of the Meeting of the 3° China-Argentina Dialogue for Cooperation and Economic Coordination 2017

Hydraulic Works and suspended the construction of the dams until the proper and independent approval of the environmental impact assessment and the holding of a public hearing in the National Congress.[27] With this in mind, we hope that the Argentine legislative and judicial power can evaluate the suitability of this project with independence, sovereignty and responsibility.

We remain at your disposal for any doubts or questions you may have. We have the confidence that the Argentine Congress will act responsibly, not only to protect the interests of the Argentine people, but also those of our shared planet.

Cordially,

1. Abogadas y Abogados para la Justicia y los Derechos Humanos, México
2. Acuíferos Vivos, España
3. Alianza Internacional de Habitantes, México
4. Alvento S.A., Argentina
5. Asamblea de Vecinos Autoconvocados por el No la mina Esquel, Argentina
6. Asamblea la voz de la Mujer, Argentina
7. Asamblea Veracruzana de Iniciativa y Defensa Ambiental, México
8. Asociación ACIMA, España
9. Asociación Ambiente y Sociedad, Colombia
10. Asociación Argentina de Abogados Ambientalistas, Argentina
11. Asociación Geográfica Ambiental, España
12. Asociación Guayllabamba Waterkeeper, Ecuador
13. Asociación Interamericana para la Defensa del Ambiente (AIDA), regional
14. Asociación Manekenk, Argentina
15. Asociación Naturalista de Aragón, España
16. Asociación para la Justicia Ambiental, España
17. Asociación para la Promoción y el Desarrollo de la Comunidad "CEIBA", Guatemala
18. Asociación Vecinal Fuente de la Reja, España
19. Aves Argentinas, Argentina
20. Aves y Conservación, Ecuador
21. Bestias del Sur Salvaje, Chile
22. Bios Iguana A.C., México
23. BirdLife International, Ecuador
24. Center for International Environmental Law (CIEL), Estados Unidos
25. Centro de Derechos Económicos y Sociales, Ecuador
26. Centro de Documentación en Derechos Humanos “Segundo Montes Mozo S.J.", Ecuador
27. Centro de Ecología Política, Estados Unidos
28. Centro Ecologista Renacer, Argentina
29. Club Náutico Escualo, Chile

[27] Fallo de la Corte Suprema de Justicia. 2016

30. COAGRET, España
31. Codeff, Chile
32. Colectivo Voces Ecológicas COVEC, Panamá
33. Coletivo de Mulheres de Altamira, Brasil
34. Collectif Camerounais des Organisations des Droits de l'Homme et de la Démocratie (COCODHD), Camerún
35. Comisión Justicia y Paz - AYSEN, Chile
36. Consejo de Pueblos Wuxhtaj , Guatemala
37. COOPERACCION, Perú
38. Coordinadora Ciudadana Ríos del Maipo, Chile
39. Corporación Privada para el Desarrollo de Aysén, Chile
40. Costa Rica Íntegra, Costa Rica
41. Ecoa, Brasil
42. Ecocide El Rio De Aguas, España
43. Ecodecision, Ecuador
44. Ecologistas en Acción Andalucía, España
45. El Paraná NO se toca, Argentina
46. Elephants Helpers Argentina , Argentina
47. Ética en los Bosques, Chile
48. Foro Ciudadano de Participación por la Justicia y los Derechos Humanos, Argentina
49. Fórum Mudanças Climáticas e Justiça Social, Brasil
50. Frente por uma Nova Politica Energética no Brasil, Brasil
51. Friends of the Earth US, Estados Unidos
52. Fundación Ambiente y Recursos Naturales, Argentina
53. Fundación Biodiversidad Argentina, Argentina
54. Fundación Futaleufú Riverkeeper, Chile
55. Fundación Hualo, Chile
56. Fundación M´Biguá, Ciudadanía y Justicia Ambiental, Argentina
57. Fundación para el Desarrollo de Políticas Sustentables (FUNDEPS), Argentina
58. Fundación para la Protección del Mar - PROMAR, Panamá
59. Fundación TIAM, Ecuador
60. Fundación Vida Silvestre Argentina, Argentina
61. Fundar, Centro de Análisis e Investigación, México
62. GAEA Abogados, Panamá
63. Greenpeace, Brasil
64. Grupo Ambientalista de Tres Arroyos, Argentina
65. Grupo de Pesquisa CNPq - Sociedades, Ambiente e Ação Pública, Brasil
66. Grupo Jaragua, República Dominicana
67. Iniciativa para las Inversiones Sustentables China-América Latina (IISCAL), Internacional

68. Instituto de Abogados para la Protección del Medio Ambiente (INSAPROMA), República Dominicana
69. Instituto Nacional de Antropología y Pensamiento Latinoamericano, Argentina
70. Instituto Socioambiental, Brasil
71. International Rivers, Internacional
72. Maule Itata Coastkeeper, Chile
73. Movimento Negro de Altamira, Brasil
74. Movimento Xingu Vivo Para sempre, Brasil
75. Movimento Xingu Vivo, Brasil
76. Movimiento social en defensa del río Ñuble, Ñuble Libre!, Chile
77. NABU Lingenfeld, Alemania
78. Patagon Journal, Chile
79. Plataforma contra la especulación urbanística y ambiental de Candeleda, España
80. Plataforma Interamericana de Derechos Humanos, Democracia y Desarrollo, Ecuador
81. Pobladores AC, México
82. Projeto Saude e Alegria Amazonia, Brasil
83. Pronatura Veracruz A.C, Mexico
84. REPAM, Ecuador
85. Río Vida, Argentina
86. SEO Birdlife, España
87. Sociedad Andaluza de Entomología, España
88. Sociedad Audubon de Panamá, Panamá
89. Sociedad de Amigos de Sorbas, España
90. Taller Ecologista, Argentina
91. Todos los 25 hasta que se vaya Monsanto, Argentina
92. URBIZI (Adscrita a la Fundación por una Nueva Cultura del Agua), España
93. Urku Estudios Amazónicos , Perú
94. WWF España, España
95. WWF, Directorio Internacional
96. WWF-Brasil, Brasil

Annex: Scientific documents that support the presentation.

Maavara, Taylo; Lauerwald, Ronny; Regnier, Pierre; Van Cappellen, Philippe. *Global perturbation of organic carbon cycling by river damming.* Published May 17, 2017. Nature Communications 8, Article number: 15347 (2017). DOI: 10.1038/ncomms15347. Available at: https://www.nature.com/articles/ncomms15347

Deemer, Bridget R.; Harrison, John A.; Li, Siyue; Beaulieu, Jake J.; DelSontro, Tonya; Barros, Nathan; Bezerra-Neto, José F.; Powers, Stephen M.; dos Santos J., Marco A.; Vonk, Arie. *Greenhouse Gas Emissions from Reservoir Water Surfaces: A New Global Synthesis.* Published October 5, 2016. BioScience (2016) 66 (11): 949-964. DOI: https://doi.org/10.1093/biosci/biw117. Available at: https://academic.oup.com/bioscience/article/66/11/949/2754271/Greenhouse-Gas-Emissions-from-Reservoir-Water

Jones, Isabel L.; Bunnefeld, Nils; Jump, Alistair S.; Peres, Carlos A.; Dent, Daisy H. *Extinction debt on reservoir land-bridge islands*. Published in July 2016. Science Direct Volume 199, Pages 75-83. DOI: https://doi.org/10.1016/j.biocon.2016.04.036. Available at: http://www.sciencedirect.com/science/article/pii/S0006320716301732?via%3Dihub

Ansar, Atif; Flyvbjerg, Bent; Budzier, Alexander; Lunn, Daniel. *Should We Build More Large Dams? The Actual Costs of Hydropower Megaproject Development*. Published March 11, 2014. Science Direct. Energy Policy, March 2014, pp.1-14. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2406852