

# China hydropower market: Accelerating the building of hydroelectric dams

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<http://news.woeob.com/1479889/c53/china-hydropower-market-accelerating-the-building-of-hydroelectric-dams>

London 11/24/2013 09:19 GMT (WooEB) Companiesandmarkets.com Recent Submissions New report published by companiesandmarkets.com: Spain men's toiletries market New report published by companiesandmarkets.com: Russia men's toiletries market New report published by companiesandmarkets.com: Spain make-up market The market for hydropower in China is expected to increase rapidly in the coming years. The hydroelectric power industry in China comprises establishments that operate hydroelectric power generation facilities. These facilities derive energy from falling or flowing water, such as rivers, streams and the overflow of dams. The establishments in this industry produce electric energy and provide electricity to transmission systems or to electric power distribution systems. The industry has experienced significant growth in installed capacity. There are many ongoing construction projects of new hydropower plants and the enlargement of existing facilities. Most major players have set high targets to increase capacity to at least two to three times their current levels. The government prioritizes the development of hydroelectricity and will focus its efforts on increasing hydropower's share of total power generation, thereby constraining the share of thermal power generation. The government's strategy for developing renewable energy in China has had a positive impact on the development of the industry. At present, many problems exist in hydropower development such as environmental protection, mainly because enterprises fail to deal with the relationship between hydropower development and local residents' interests as well as ecological protection. With 2020 clean-energy targets to meet, China is set to accelerate the building of hydroelectric dams, reversing a long halt caused by environmental concerns and the social upheaval of relocating people living in the shadow of dam sites.

Click for Report details: Analyzing the Hydropower Industry in China - See more at: <http://news.woeob.com/1479889/c53/china-hydropower-market-accelerating-the-building-of-hydroelectric-dams#sthash.GU8lv8eN.dpuf>

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## Brahmaputra reservoirs to counter China moves on river water

But plans to manage fallout from Chinese diversion of water face a hurdle: submergence of towns and village

[Utpal Bhaskar](#)

<http://www.livemint.com/Politics/76vMnKHPzqUD6epV1SHQjI/Brahmaputra-reservoirs-to-counter-China-moves-on-river-water.html>

**New Delhi:** India is planning to build a series of massive water reservoirs in Arunachal Pradesh in order to manage the fallout from Chinese attempts to divert river waters that flow into the Brahmaputra. But the plans have run up against a potential hurdle: the possible submergence of towns and villages.

According to documents reviewed by *Mint*, while India is trying to expedite the construction of hydropower projects in the strategically important north-eastern state, it also wants to prioritize the construction of storage projects as a fallback option.

These projects with large water reservoirs can store water during the monsoon and use it during the off-peak season unlike run-of-the-river (RoR) projects.

RoR projects harness the seasonal flows of the river to generate electricity and supply peak load as opposed to big dams with large water reservoirs that are good for base loads.

Reservoir projects, on the other hand, involve water storage, which addresses the risks associated with seasonal changes in the natural flow and availability of river water.

"We want the projects to be storage projects as it will help us store water in the monsoon season, even if China diverts water," said a senior Indian government official aware of the country's strategy.

Planners are concerned because of all Indian states, Arunachal Pradesh has the highest potential for hydropower generation, estimated at 50,064 megawatts (MW)—much needed for economic development. But less than 1%, or 405MW, has been commissioned so far, even as 94 projects with a combined capacity of 41,502.5MW have been allotted by the state government.

China has been reticent about talking about its water diversion or construction plans, and has termed the projects RoR schemes. But Indian experts, not wanting to take chances, feel that building water reservoirs in Arunachal Pradesh can minimize any impact on the Brahmaputra's morphology, environment and power projects.

However, the construction of large storage projects can lead to issues of rehabilitation—a hotly debated issue in India.

According to documents reviewed by *Mint*, China has 36 projects on rivers upstream of the Brahmaputra, of which 30 have already been completed.

Of the rest, two are under-construction projects at Zangmu and Phudo Dzong. The remaining four sites are at Jiexu, Zhongda, Jiacha and on the Great Bend of Brahmaputra.

A partial blockage of the Brahmaputra river created by landslides near the Great Bend has been an area of concern for New Delhi and is being monitored by Indian intelligence agencies.

"If China diverts water, one has to have a fallback project in the form of storage projects. In the lean period or during winters, this stored water can be used. This was also the recommendation of the IMEG (inter-ministerial expert group)," said [Umesh Narayan Panjari](#), chairman of Bihar Electricity Regulatory Commission, and a former secretary in the ministry of water resources.

IMEG was set up by a committee of secretaries on the Brahmaputra water diversion issue.

Indian experts are of the view that the diversion of water by China will affect the 2,700MW Siang Lower project being developed by JP Associates and Siang Upper or Siang Intermediate projects planned by state-owned [NHPC](#) Ltd.

*Mint* reported on 3 March 2010 about Jaiprakash Hydro-Power Ltd seeking to raise tariff for power generated from its project in Arunachal Pradesh in the event of a decrease in water discharge because of Chinese actions.

However, the possible storage issue has assumed paramount importance because of the potential damage the reservoirs could cause to the local habitations.

A case in point is the Siang basin, where NHPC had planned a single power project of 9,500MW having a storage capacity of 13.91 billion cubic metres (bcm). This project would have submerged two towns—Tuting and Yingkiang—with a combined population of 17,000.

After opposition from the Arunachal Pradesh government, planners prepared a new pre-feasibility report in 2009. According to the new report, the project was divided into two sections—the Siang Upper Stage I (6,000MW) and Stage II (3,750MW) with storage of around 1.032 bcm and 0.75 bcm, respectively.

However, this vastly reduces storage capacity from 13.9 bcm to 1.78 bcm.

"To increase the storage capacity, India's ministry of water resources is of the view that a single storage project is the ideal solution, although the Arunachal Pradesh government is averse to the idea," said a second Indian government official, who also didn't want to be identified due to the sensitive nature of the issue.

Arunachal Pradesh chief secretary [H.K. Paliwal](#) countered: "As of now, we are of the view that these towns shouldn't be submerged. Once the investigations are carried out, the work will start on the second option of setting up projects in two stages."

Storage projects will also help control floods. According to India's ministry of water resources, planned reservoirs in the Subansiri, Dibang and Siang basins are adequate for flood moderation; with capacities of 3.02 bcm, 1.76 bcm and 1.78 bcm, respectively. However, in the Lohit basin, there is an additional requirement of 1 bcm.

These storage projects will be of immense help in the dry season, with Indian planners being of the opinion that precipitation in China contributes only 7% to the flow of three tributaries of the Brahmaputra—Subansiri, Siang and Lohit—that originate in China.

According to India's ministry of water resources, of the total catchment area of 580,000 sq. km, 50% lies in Tibet, 34% in India, and the balance in Bangladesh and Bhutan. The average annual rainfall is 400mm in Tibet, and 3,000mm on the Indian side.

Of the 2,880km of the Brahmaputra's length, 1,625km is in Tibet, 918km in India, and 337km in Bangladesh. According to the Central Water Commission, while 60% of the water in the Brahmaputra comes from India, 40% comes from Tibet.

However, analysts have questioned the data and are sceptical about India's plans.

[Avinash Godbole](#), a research assistant at the Institute for Defence Studies and Analyses (Idsa), said: "It is very difficult to build storage dams in the North-East. Then there is also the issue of relocation and rehabilitation. India has, however, raised the issue of seismic safety of the dam projects planned by China and their long-term implications."

According to the United Nations, the cross-border annual aggregate flow of the Brahmaputra river system is 165.4 bcm, which is greater than the combined trans-boundary flow of the three key rivers—the Mekong, the Salween and the Irrawady—that run from the Tibetan plateau to South-East Asia.

"This is a good strategy," added Panjiar, who was also additional secretary in India's power ministry.

Alongside, New Delhi is also developing the physical infrastructure along the Brahmaputra river basins, having identified roads, bridges and air connectivity that need to be built.

The Subansiri, Lohit and Siang basins are strategically important as they are close to the international border with China. Projects with a capacity of 11,368.5MW, 7,912MW and 7,247MW have been allocated in the Siang, Subansiri and Lohit basins, respectively. However, only the 2,000MW Lower Subansiri project is under construction by NHPC.

Some of the critical infrastructure projects that have been identified for development in the Siang basin are the 100km Akajan-Likabali-Bame road link; 180km Along-Tato-Mechuka-Hirong link; the Bogibeel bridge; and extension of the existing airstrip at Along for commercial aircraft.

For the Dibang basin, projects including building the Tezu-Paya-Roing road, 90km Meka-Roing-Hunli road, 140km Hunli-Anini road and bypasses on National Highway 37 that connects Dibrugarh and Tinsukia (in Assam) with Dhola in Arunachal Pradesh. In addition, bridges such as Alubari, Dhola-Sadiya, Deopani RCC and Ipplipani are to be built.

In the Lohit basin, the road links that are to be constructed include: Digaru-Tezu-Hawai, Digaru-Tezu-Tohangam, Tohangam-Hayuliang, Demwe-Brahmakund-Arowa-Hayuliang, Hayuliang-Changwinti-Hawai and Hawai-Walong, along with extending the existing airstrip at Tezu for operation of commercial aircraft.

"While we need development in the North-East, the government is stepping up efforts as security has become a perspective in our context," added Godbole of Idsa, whose research area comprises China's domestic politics, minority, environment and energy.

*India and China have been engaged in a dispute over the diversion of the Brahmaputra river, which originates in Tibet. Even while India is still exploring a diplomatic option, it has initiated an action plan that would give it user rights. In the second of a three-part series, Mint chronicles India's strategy of prioritizing the construction of water large storage projects*

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# Need For Hydro Electric Energy

**Over a very long period of time, fossil fuels are the primary source for electricity generation. These fuels are exhausting with time and there is a prime need to shift focus over renewable sources of energy like hydroelectric energy.**

<http://www.freepressindex.com/need-for-hydro-electric-energy-496969.html>

We all have heard about hydropower, and it is, in fact, the leading form of renewable energy across the globe, generating 21 per cent of the renewable energy and delivering it to over one-seventh of the world's population with power. Hydroelectricity is the electricity that is generated from the kinetic energy tapped in the moving water. It is a very optimistic source of energy as it generates a small number of fossil fuel, or greenhouse gases.

Moving water at every speed generates energy and the energy produced from this renewable source is called hydroelectric power or hydropower. It is the name given to the electricity which is produced from the gravitational force of water. Hydropower possesses a long history of usage, although the first plant as we all know was built in 1878. It is used widely more than other sources of renewable energy such as wind power and accounts for over 80 percent of electricity produced from the other two. It also comprises 20 percent of the world's electricity source and this verifies its popularity worldwide. The Scandinavian and US countries are among the largest users of this power since they have huge water reservoirs.

## How Hydro Energy Works

Generally, the hydro energy plant contains a stator, generator, turbines, rotor, generator, shaft, wicket gate, generator, turbines and turbine blades for producing energy. When water streams onto the turbine blades, the turbine converts the energy generated into mechanical form, and then the generator finally converts this mechanical energy into electricity. The generator works upon the principle of magnets, which defines that when you move a magnet past any conductor, it will lead to an electric flow. The rotor comprises filed poles and it revolves at a static speed. While rotating, it causes the field poles to move past stator conductors therefore having the same result of an electricity flow. It is imperative to note that water should not be static and has to be moving for it to produce electricity.

With competent power plant management services, it has become very easy to generate hydroelectricity effectively. Governments build dams across big rivers so that they can bind the kinetic energy discharge when this water is passed through a turbine. They are thus able to generate electricity on a very large scale.

## Merits of Hydroelectric Power

1. Since it relies exclusively on water, this form of power releases no injurious chemicals and carbon dioxide.
2. They require slight power plant maintenance and have an extensive life cycle.

## Demerits

Though, the shortcomings are present as well. These comprise

1.Devastation of natural habitat for both animals and human because the dams are built in areas where water flow is supreme and the soils has great water retention levels. This implies that land for agriculture is used to preserve water and small hills are conveyed together through human activity to construct the large dams. The natural beauty of these intertwining hills is demolished.

2.The construction of these water reservoirs is expensive and necessitates lots of human capital to accomplish it.

Hydroelectric power generation is an ideal method of generating electricity and is used extensively in a number of countries since it saves on fossil fuels and causes very less health threats.

For more information visit site: <http://www.sterling-energy.com/>

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## Algeria

### **Hocine Necib à propos des risques sismiques Les barrages «totalement sécurisés»**

Les barrages du territoire national sont totalement sécurisés face au risque sismique, a assuré hier Hocine Necib, ministre de Ressources en eau. Il a toutefois précisé lors d'un colloque international sur les barrages et le risque sismique que l'objectif pour le secteur est de s'approprier les dernières innovations sur le plan scientifique en vue de renforcer la culture de sécurisation des ouvrages.

F.-Zohra B. - Alger (Le Soir) - Si les barrages sur le territoire national et plus spécialement ceux situés dans les zones à risque sismique, sont totalement sécurisés, le ministre des Ressources en eau a toutefois précisé qu'il est nécessaire de rester en contact direct avec les Universités et le domaine de la recherche opérationnelle. Il a, à cet effet assuré qu'il s'agira de profiter de l'expérience des experts aussi bien nationaux qu'internationaux. Le ministre a déclaré que la présence du ministre de l'Enseignement supérieur et de la Recherche scientifique, Mohamed Mebarki n'est pas juste symbolique mais exprime une volonté de rester en contact permanent avec l'Université.

«Nous devons travailler avec l'Université, la recherche appliquée doit reprendre sa place. Je me suis entendu avec le ministre de l'Enseignement supérieur pour mettre au point une concertation permanente ainsi que la signature d'un accord pour concrétiser ce projet», a déclaré le ministre. Il précisera de ce fait que la collaboration se fera aussi avec les universités au niveau international.

**Concernant la sécurité des barrages face au risque sismique, le ministre des Ressources en eau a précisé que tous les barrages sont conçus selon les règles et les recommandations de la commission internationale des grands barrages (CIGB).**

Il notera qu'il est nécessaire de relancer les activités de collaboration avec cette commission.«L'aléa sismique a évolué dans le temps et le règlement parasismique a été revu depuis 2003, nous devons donc réfléchir ensemble et lancer un message aux ingénieurs et aux étudiants pour que nous arrivions ensemble à tirer les enseignements des expériences précédentes», a déclaré le ministre. Pour Hocine Necib, de nouvelles techniques pour la surveillance des barrages doivent être adoptées. Ceci bien que selon lui tous les barrages sont dotés d'un réseau d'auscultation.

Il annoncera également la création d'une structure qui s'occupera principalement de la recherche. Il s'agit à travers cette rencontre de mettre en évidence les mesures à prendre en vue de renforcer davantage la sécurité des barrages et des 15 millions de citoyens qui vivent à l'aval de ces infrastructures.

Pour sa part, M. Abbas, directeur de l'agence nationale des barrages et transferts (ANBT) a déclaré que les infrastructures hydrauliques sont équipées d'accéléromètres et de sismographes.

Les experts présents noteront en outre que cette rencontre est dictée par la complexité de la gestion des

barrages notamment pour ce qui est du volet sécurité. Ceci d'autant que le nord du pays, où sont construits la plupart des barrages est soumis à une permanente activité sismique.  
F.-Z. B

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## L'Algérie comptera 139 barrages en exploitation en 2030 (ANBT)

<http://www.letempsdz.com//content/view/107248/1/>

Cent trente-neuf (139) barrages seront en exploitation en 2030 en Algérie contre 70 actuellement, ce qui permettra de mobiliser une capacité totale de 12 milliards de mètres cubes environ, a indiqué, dimanche à Alger, le directeur général de l'Agence nationale des barrages et transferts (ANBT), Saïd Abbas.

"En 2030, l'Algérie disposera d'un patrimoine unique en Afrique de 139 barrages avec une capacité totale de 12 milliards de m<sup>3</sup> environ", a dit M. Abbas à l'ouverture d'un colloque international de deux jours sur le thème des barrages et des séismes.

Le DG de l'ANBT a souligné que la capacité des 70 barrages en exploitation est de 7,1 milliards m<sup>3</sup>.

De son côté, le ministre des Ressources en eau, Hocine Necib, a souligné que depuis le début des années 2000, ce patrimoine a augmenté par la mise en service de 27 barrages alors que 14 autres "sont actuellement en construction et 23 barrages sont programmés pour le plan quinquennal 2015-2019".

M. Necib a indiqué les 70 barrages en exploitation doivent être préservés contre les séismes car ils constituent "la colonne vertébrale de l'outil de sécurisation de l'approvisionnement en eau de la population".

"Il est évident que ce patrimoine doit être préservé" et que des mesures soient prises pour renforcer la sécurité des "15% de nos concitoyens qui vivent" à leur aval, a encore souligné le ministre selon lequel il est nécessaire "d'aller vers une gestion de notre patrimoine hydraulique en prenant en compte les aléas naturels".

"J'attends de ce colloque qu'il nous éclaire, à la lumière des dernières avancées de la science et de la technologie, sur toutes mesures à prendre pour assurer une sécurité optimale de ce patrimoine des aléas naturels", a souligné le ministre.

Il a assuré que les barrages en Algérie sont sûrs et qu'ils ont été conçus sur la base des recommandations de la commission internationale des grands barrages.

M. Necib a rappelé que les séismes d'El Asnam en 1980 et de Boumerdès en 2003 "ont permis de vérifier la solidité de nos barrages qui ont parfaitement résisté à ces deux chocs violents et ces tests à grande échelle nous rassurent de la fiabilité des conceptions et la qualité de la réalisation de ces ouvrages".

Pour améliorer davantage les méthodes de sécurité des barrages, le ministre a annoncé qu'un accord de partenariat sera signé prochainement avec le ministère de l'Enseignement supérieur et de la recherche scientifique afin d'introduire des programmes de recherche appliquée dans le domaine de la construction des barrages et de la mesure des aléas climatiques (les crues) et sismique.

Cet aléa sismique est évalué en tenant compte de la nature du site du barrage afin d'identifier les failles qui peuvent provoquer des séismes et prendre les mesures nécessaires à la sécurité de l'ouvrage, a dit Youssef Bouhadad, directeur au centre national de recherche appliquée en génie sismique dans une conférence sur ce sujet.

En marge de la rencontre, le professeur Mustapha Meghraoui, de l'Institut de physique du globe de Strasbourg en France, a souligné qu'il n'existe pas "de risque zéro" mais que la recherche établit les meilleurs moyens de construire des barrages en réduisant les risques.

Le directeur du Centre national de recherche appliquée en génie parasismique, Mohamed Belazougui, a souligné que des études spécifiques seront menées avant la construction des nouveaux barrages afin d'identifier les risques d'apparition des failles qui pourraient menacer la stabilité des ouvrages.

Enfin, les dernières précipitations enregistrées à travers le pays ont constitué un apport de 20 millions de m<sup>3</sup>, soit un taux de 69% entre les journées du 14 au 16 novembre, a indiqué le ministre.

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<http://thenationonlineng.net/new/centre-urges-southwest-governors-build-dams/>

## Centre urges Southwest governors to build dams

Posted by: Ernest Nwokolo, Abeokuta in NewsNovember 28, 2013

The Southwest Regional Centre for National Water Resources Capacity Building Network (SRCNWRCBN) yesterday urged the governments of Southwest states to build common dams.

SRCNWRCBN, an arm of the Federal University of Agriculture (FUNAAB) in Abeokuta, Ogun State, said given the depleting effects of climate change on water supply, there was need for build dams to meet the needs of humans, plants and animals and prevent "starvation and poverty" in the Southwest.

Coordinator of the centre Prof. Johnson Adewunmi said such dams, if built, would be used to preserve water for drinking, irrigation and fishing, among other needs.

Adewunmi spoke with reporters in Abeokuta after the opening of a regional workshop on climate change and integrated water resources management in the Southwest.

At the workshop, which was opened by FUNAAB's Vice-Chancellor, Prof. Olusola Oyewole, were participants from the ministries of Environment and Water Resources in Lagos, Ogun, Oyo, Ekiti and Osun states.

Adewunmi said the availability of dams would make Southwest farmers active all year round like their counterparts in the north.

He said: "The Southwest has not been clamouring for the construction of dams to preserve water. Water is not only for drinking; it is also for irrigation, fishing and other needs.

"It is up to our leaders to build dams. In the early 60s and 70s, Audu Bako, who was governing Kano State then, foresaw the need for dams. Today, Kano State has over 50 dams and two or three of them can generate hydro electricity. But here, when they talk of dams, the government and our leaders will be thinking of rural water supply, it is not.

"This water can also be used to irrigate the field, so that throughout the year, there will be farming activities. In those days, Southwest farmers used to go on merriment during the dry season, but in the North, once the rain stops, they go for irrigation and make money throughout the year."

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## Canada

# Massive project gives new life to old hydro dams

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JOSH O'KANE

SMOKY FALLS, ONT. — The Globe and Mail

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Halfway between Timmins and James Bay, it's below zero and already snowing in October. The weather, though, does little to stop 1,100 workers stationed here. Men and women, professionals and apprentices – including many First Nations people – have been working year-round since 2010 to lay the foundation to power Northern Ontario for future generations.

If all goes according to plan, by 2015, they will double the capacity of the four dams that make up the Lower Mattagami River Hydroelectric Complex, a \$2.6-billion project that will add 438 megawatts to the Northern Ontario grid – enough peak power for at least 400,000 homes.

In Smoky Falls, Ontario Power Generation is refurbishing three hydroelectric stations and completely replacing a fourth along the Mattagami River, which flows north into James Bay. It's a long play on sustainable energy infrastructure in Canada's North: By building onto existing stations, the project will avoid disrupting additional watersheds, minimizing its environmental impact while maximizing output.

But the project recognizes more than just the land that surrounds it; it also pays long-overdue respect to some of the first people who lived there. In a landmark partnership, the Moose Cree

First Nation has a 25-per-cent stake in the project that will see them share in its revenue for generations.

“There is so much to the agreement,” says Moose Cree Chief Norm Hardisty Jr. His band’s reserve is north of the project in Moose Factory, Ont. “Certainly, it’s not just today we’re dealing with. We’re just not looking at this generation. Moving forward, we’re already prepared to have a trust and looking to invest most of the revenue we will be generating.” The Lower Mattagami refurbishment is “more than just a way to build capacity without flooding more lands for headponds,” says Mike Martelli, OPG’s senior vice-president of hydro-thermal operations. Partnering with the Moose Cree has “resulted in an improvement in the capacity of the First Nation,” he says, through revenue sharing, skills training, employment and subcontracting opportunities.

This is not the first First Nation-utility partnership of its kind, but it is the largest. In 2009, OPG began to operate the 12 MW Lac Seul Station in a 25-per-cent partnership with the Lac Seul First Nation, northeast of Dryden, Ont. The Lower Mattagami project will add 36 times as much capacity as Lac Seul. The capacity of a hydroelectric project depends on two characteristics of the generating station: the head, or difference in height between water intake and the turbine, and flow, the amount of water the station can take in. These are ideal at Lower Mattagami, says Mr. Martelli, an engineer who’s spent most of his career working with Ontario’s hydroelectric generating stations; therefore, he says, it makes sense to build on the existing stations’ capacities. (Smoky Falls, for instance, has an excellent head differential of 40 metres.)

The structure of these hydroelectric stations can last more than 100 years; the Decew Falls I Generating Station near St. Catharines, for instance, went into service in 1898.

While three of the generating stations – Harmon, Kipling and Little Long – will receive one additional generating unit each, the original Smoky Falls structure is being completely replaced, with a new three-unit station being built adjacent to it. This will bring the total generating capacity at Lower Mattagami to 924 megawatts from 486 megawatts.

Smoky Falls was built in the 1920s by Spruce Falls Power and Paper Co. to supply power for its Kapuskasing pulp and paper mill, which for a time supplied newsprint to its longtime co-owner, The New York Times. Thirty years later, Ontario Hydro built its own three stations near Smoky Falls: Harmon and Kipling stations downstream and Little Long Station upstream.

Ontario Hydro agreed to buy the Smoky Falls station at the end of the 1980s, and began to look into expanding the capacity of all four stations, holding environmental hearings and consultations with First Nations on whose traditional lands the project would use – the Moose Cree.

Bob Rae’s NDP government gave the project a go-ahead in 1994 without a formal environmental review, but the utility eventually backed down; not only did consultations with the Moose Cree break down, but the utility also took a \$280-million writeoff in 1996 in drastically reducing the project’s potential scope.

“We didn’t really know each other well at the time,” Chief Hardisty says. While the utility did try to get the band’s consent, “we were given an offer, and we said no.”

In 2005, the utility – then named Ontario Power Generation after a restructuring under premier Mike Harris – came back to the table with the Moose Cree. Over time, an agreement was drafted that Chief Hardisty says takes into account the futures of both the First Nation and the land the project sits on. This includes agreements on environmental impact goals, contracts to work on the project and a 25-per-cent stake in the project, which will bring them a share of the profits for the life of the stations.

This stake is a central part of the reconciliation for past harm done to the First Nation throughout the Lower Mattagami facilities' history – the dams were built on traditional Moose Cree territory without consultation, and treaty rights were ignored.

While a small group of Moose Cree from the Kapuskasing area have publicly called the terms of reconciliation insufficient, a majority of Moose Cree members voted in favour of the agreement in 2009, making it legally binding.

The non-financial benefits are also extensive for First Nations, including Moose Cree members. As part of the agreement, the project promised 200 person years of employment to First Nations workers – which OPG says has now surpassed 350 – as well as some crucial skills training.

“It’s great to see our people get a chance to work and get into the trades,” says Christopher Gangon, a 25-year-old Moose Cree member working at Lower Mattagami as an electrical apprentice. And Karen McKay, 45, got experience driving a variety of high-load trucks. “It really opened a lot of doors with the experience I got here.”

The stations will each go into service individually once construction is complete. The first station, Little Long, is undergoing a series of final tests and is expected to be in service by the end of the year.

Some not happy with partnership

Not all Moose Cree members are happy with the OPG partnership. A group representing about 200 aboriginal people, whose ancestors lived in the Smoky Falls area and who are officially Moose Cree members, say their voices have been historically neglected by the Moose Cree, and that its partnership with OPG on the Lower Mattagami project is the straw that broke the camel’s back.

The group, which calls itself the Kapuskasing Cree First Nation, is based primarily in Kapuskasing, Ont., about 250 kilometres from Moose Cree’s headquarters in Moose Factory. The group, while not a registered band, believes it was arbitrarily assigned to the Moose Cree while living in the bush in the mid-20th century, and it does not want to affiliate with the Moose Cree.

The group has filed a statement of claim with the Ontario Superior Court of Justice in Cochrane, Ont., and plans to fight for a representation order to be able to litigate as a collective – with the aim to some day become its own band, as well as to declare itself a stakeholder in the Lower Mattagami project. While the members don’t necessarily want to halt the project – some are even employed there – they want a separate financial stake, at least equal to the Moose Cree’s, as they believe the reconciliation and environmental terms of the agreement are insufficient.

“Fifty years ago, the damage was done. We want to be reassured it won’t happen again,” says Gaius Napash, the group’s chief.

The members believe that the funds used for the Moose Cree’s stake in the Lower Mattagami project will not sufficiently flow to their families, who were removed from the bush in the 1960s and 70s; Chief Napash lived there until he was a teenager. Their homes were destroyed, and they claim that their traditional trapping and hunting grounds were damaged, and that gravesites were lost to the original project, including in the headpond of Little Long Station. With their stake, the group hopes to establish a reserve near the project, where their ancestors lived until a railroad to the Smoky Falls dam was removed 40 years ago.

“We just want a place that we can call home,” says Archie Sutherland, the group’s deputy chief.

But Chief Hardisty of the Moose Cree says that the group was duly consulted before the agreement was legally ratified by the band’s membership, and that they benefit from the partnership as equal Moose Cree members. “Any project in the Moose Cree Traditional

Territory is taken as a collective,” Chief Hardisty says. “What we have today is a collective agreement that represents all [of our] people.”