MARTEX
INVEST
str. 3, 8 Novovladykinskiy proezd
Moscow 127106 Russia
Tel.: +7 (495) 608 6058, 220 9420
http://martex.ru; mail@martex.ru

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Mr Stuart Anderson
Chair of the Council
Conwy County Borough Council

Bodlondeb
Conwy
North Wales
LL32 8DU

Dear Cllr. Dr. Anderson ,

Let me first introduce myself. My name is Vladlen Lunin and I am the CEO of Martex Invest Ltd, a Russian company involved in the development of power stations.

I am writing to you with a proposition to consider a project of construction a tidal power plant at Conwy Bay (Fig.1). The installed capacity of this tidal power plant would be at least 36 MW and energy production – 67 GWh per annum.

For the Conwy tidal power plant project we intend to use the tested and proved successful at Kislogubskaya tidal power plant Russian technologies, namely the flotation construction method and orthogonal turbines that allow saving up to 40% of the cost. The mentioned tidal power plant using these technologies was commissioned in 2007 and is in operation since then.

I would also like to mention that the dam modules of the discussed Conwy tidal power plant may in the future be used as foundations for wind and wave power generators as this would reduce the cost of erection and maintenance of these facilities by at least 60% as compared to foundations on the sea bed.

The construction of the Conwy tidal power plant will boost the economy of the Conwy County and facilitate the expansion of its transport infrastructure. An increase in fish and marine life resources by 10-12% is also expected judging by the experience gained through the operation of the Kislogubskaya tidal power plant mentioned above. Several thousand new jobs will be created during construction, a new significant taxpayer will emerge and more than 74 million pounds will flow into the economies of the Conwy County and UK at large. The shipbuilding industry as well as other industries in UK will receive large contracts for equipment manufacture and civil works.

The Conwy tidal power plant may become a famous attraction, as it will be the world's first combined tidal and wave power plant. That will definitely boost the popularity of the county. Indeed, it is well known that the second in popularity with tourists after the Eifel Tower site is the Rance tidal power plant in France visited by up to 200 000 tourist a year. It is quite realistic to expect that something similar will happen with the Conwy tidal power plant.

With the commissioning of the Conwy tidal power plant Conwy County will become a large producer of green power. Generation of 67 GWh of clean electricity per annum will reduce CO_2 emissions by 33,5 thousand tons a year.

We are aware that navigation in Conwy Bay is important. However, navigation problems, as in the case of many hydropower plants in the world, are solvable by construction of sluices and channels for shipping, fish and marine animals' migration. So, for example, in the Severn tidal power plant project

in the very busy Bristol Channel the shipping problems are to be solved by the construction of sluices (Fig.2). The last obstacle that so far prevents commencement of the Severn tidal power plant construction is ecological, namely the expected rise of the level of water in the estuary and the resulting damage to the shoreline and marine life. I am very pleased to inform you that the orthogonal turbine designed in Russia and which we intend to use eliminates this problem.

The Conwy tidal power plant's dam will be equipped with a number of sluices and passages sufficient for the migration of fish and marine animals.

The cost of tidal energy generated by the Rance tidal power in the Électricité de France power system is lower than that produced by nuclear, thermal or conventional hydropower stations. Implementation of the discussed project will lead to a lower cost of electricity in the Conwy County. That in itself will become a stimulus for business development and may attract new industries to your region.

Mr Gregory Barker, the UK Minister of State for Energy and Climate Change announced that by 2050 27 GW of tidal energy shall be used in the country. The Conwy tidal power plant may become one of the first large tidal power plants erected within the framework of this program.

Russian specialists from the Scientific Research Institute for Power Structures and JSC RusHydro who designed and constructed the successfully operating Kislogubskaya and Malaya Mezenskaya tidal power plants in Russia may realize the Conwy tidal power plant construction project using the suggested innovative technologies.

We would be pleased to discuss all the advantages of constructing a tidal power station in the Conwy County if it would be acceptable for you to invite 4-5 of our specialists for such a discussion.

I have attached a road map of the actions we intend to undertake to provide you with the complete information on all the aspects of the project to this letter. These are standard regulations for the conduct of examinations and studies required to obtain a planning permission.

In conclusion we are very pleased to bring to you attention the results of the 35 years long ecological monitoring at the Kislogubskaya tidal power plant in order to substantiate the fact that a tidal power plant does not cause any noticeable damage to the ecology of its site. We commit to conduct any required ecological studies prior to construction of the Conwy tidal power plant and if it indeed materializes we intend to conduct a following ecological monitoring of the site.

Best Regards

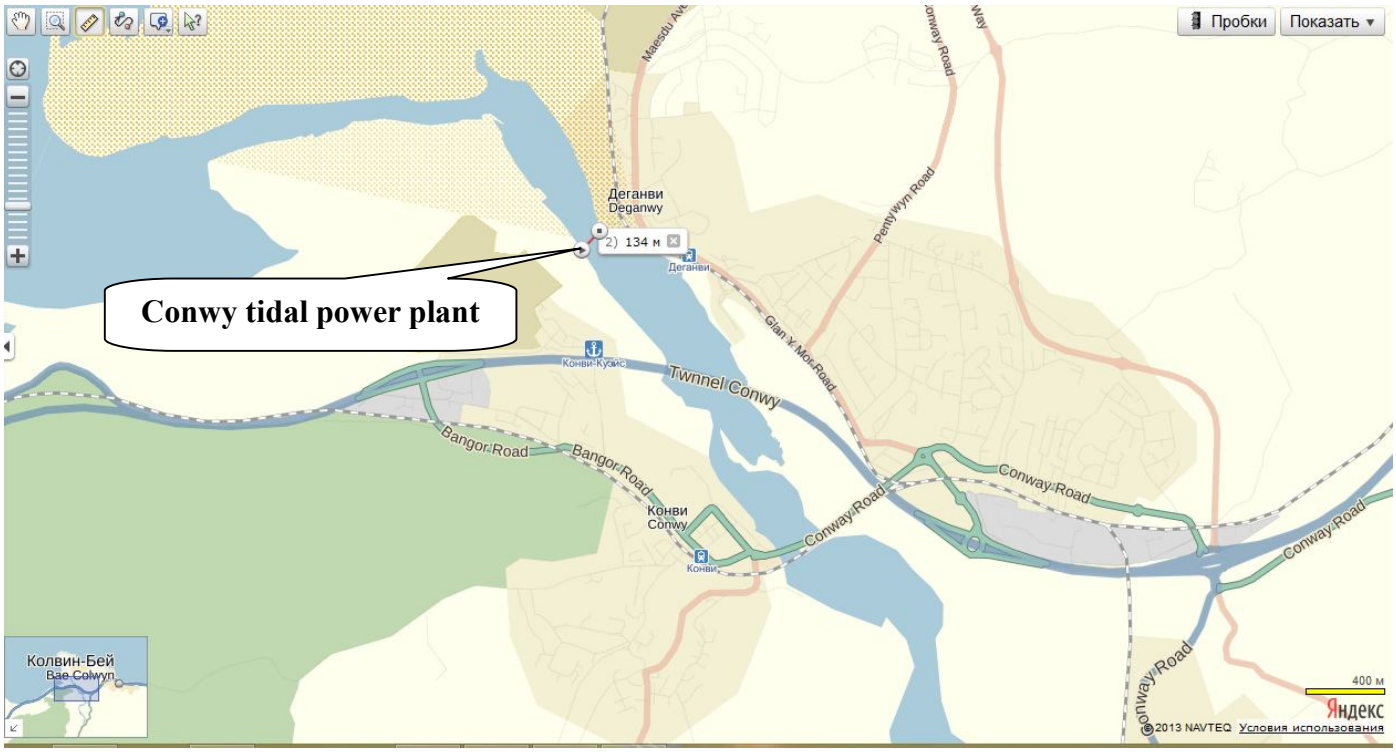
Vladlen Lunin
CEO of Martex Invest Ltd

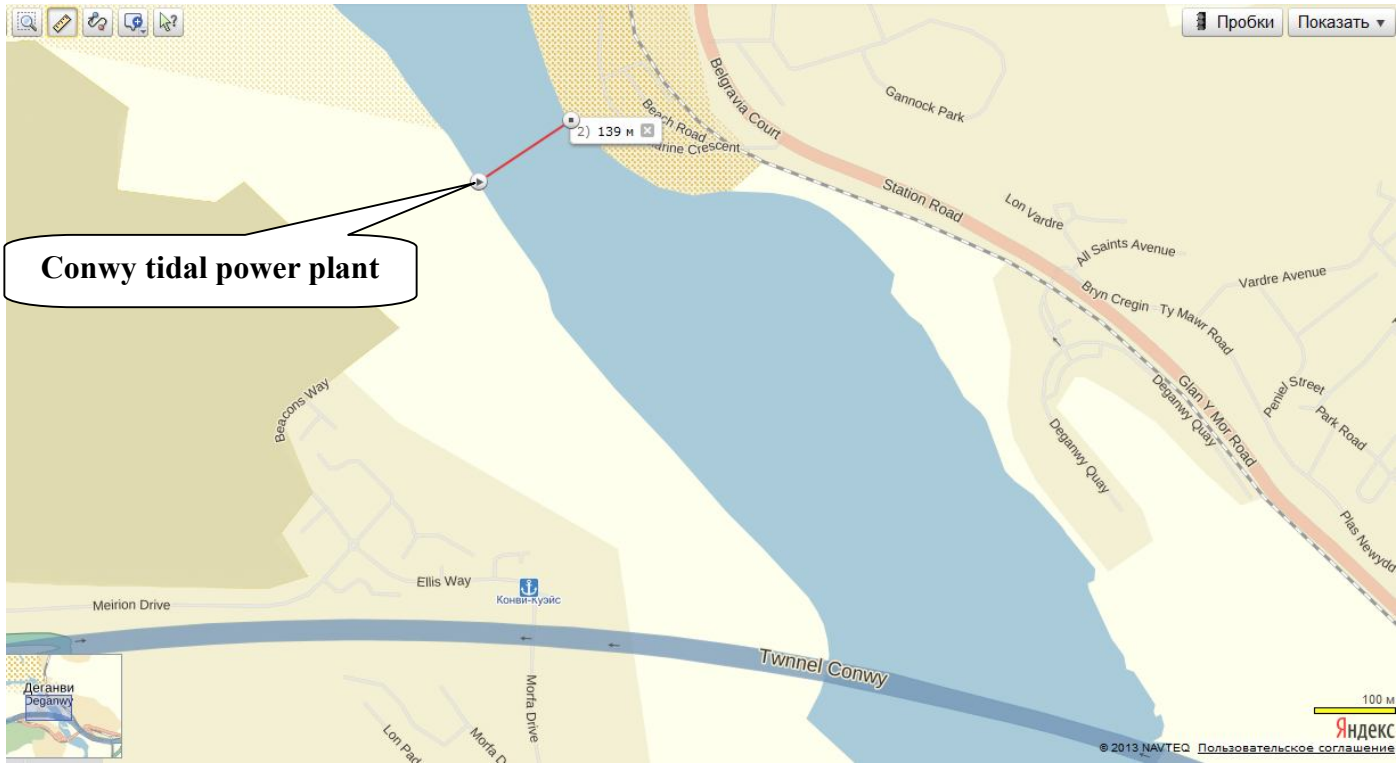
Appendices:

1. Fig.1. Location of the Conwy tidal power plant
2. Fig.2. Location of the Severn tidal power plant in Bristol Channel and Scheme of the Severn tidal power plant
3. Developing Renewable Energy Responsibly
4. Tidal Power Plant Ecological Safety Monitoring

Appendix 1

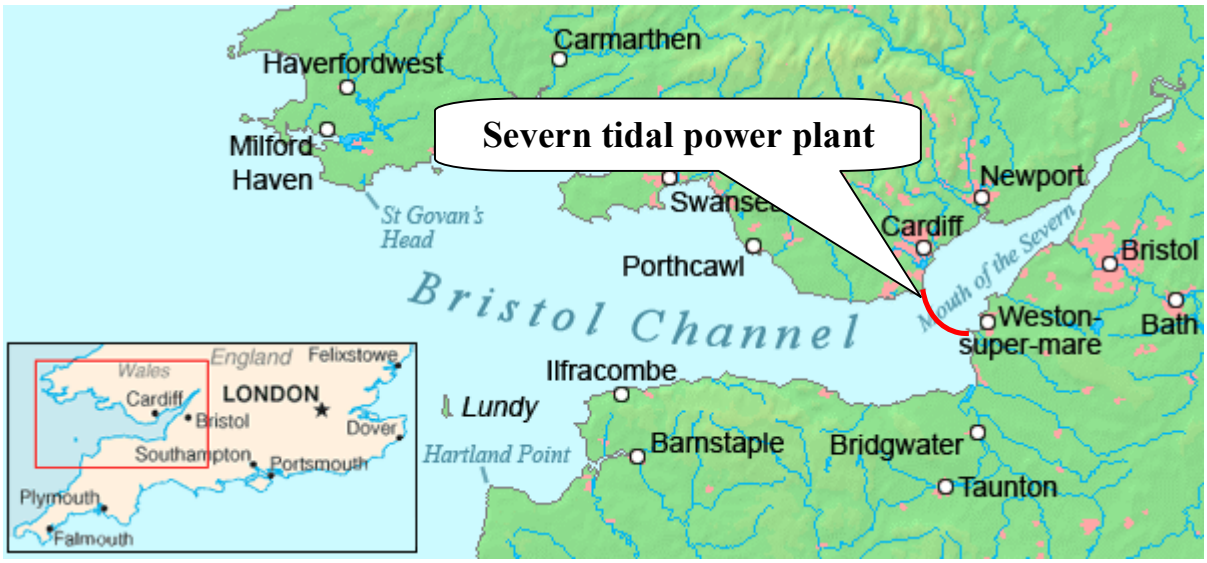
Fig.1. Location of the Conwy tidal power plant



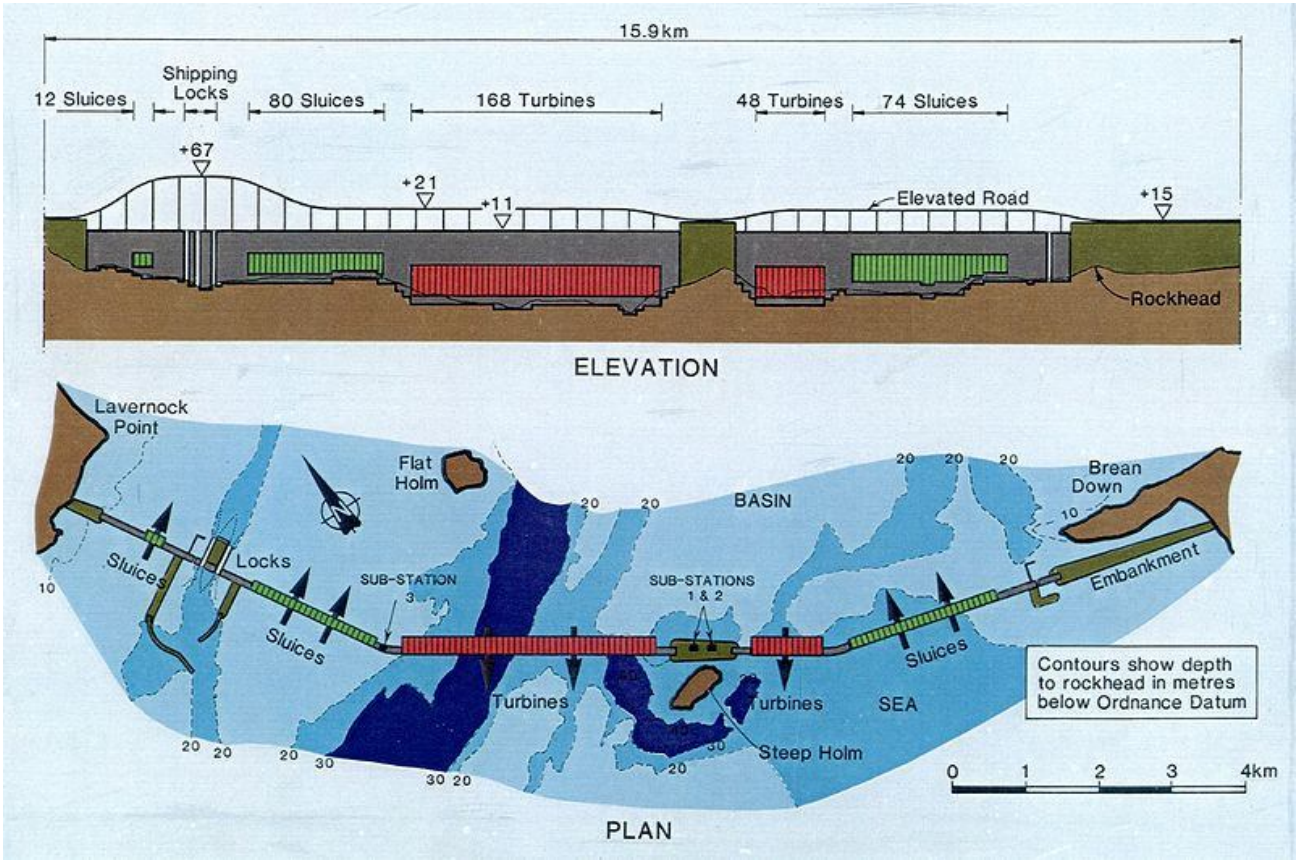


Appendix 2

Fig.2. Location of the Severn tidal power plant in Bristol Channel



Scheme of the Severn tidal power plant



Appendix 3

Developing Renewable Energy Responsibly

At ScottishPower Renewables each one of our projects follows a thorough development process including consultation with local communities to shape how our proposals develop and detailed environmental studies to inform design.

We understand that the development and planning processes can seem complicated and we aim to make them as transparent as possible so each of our stakeholders understands when they can give feedback and how this will be used to influence the project.

The development process followed by each project can vary depending on the location and scale, however, the steps below highlight how this may typically evolve. The process is broadly similar across onshore wind, offshore wind and marine energy projects.

Scoping

When we have identified an area suitable for renewable energy development, we will undertake early consultation with stakeholders and use their feedback to inform the key issues we will consider when we begin its design. Consultees can include, but are not limited to:

- Government
- Local authorities
- Environmental and conservation bodies
- Local businesses
- Community organisations

Environmental Impact Assessment

Environmental Impact Assessment is a formal part of the planning process for renewable energy developments and involves undertaking environmental surveys of the proposed site to quantify and evaluate any potential effects the project may have and to identify appropriate measures to eliminate, avoid, reduce or mitigate these effects. The topics covered in an Environmental Impact Assessment vary depending on the project's location and nature (onshore wind, offshore wind, marine). Areas typically examined include, but are not limited to:

- Landscape and visual effects
- Ecology and ornithology
- Cultural heritage
- Hydrology, hydrogeology, geology and oceanography
- Access, traffic and transport
- Social and economic effects
- Aviation and telecommunications

Consultation

When we have scoped the project and began environmental assessments, we will host local consultations events to introduce our proposals and gather feedback at this early stage to shape how we progress.

Prepare Environmental Statement

An Environmental Statement is the name given to the document that presents the findings of the Environmental Impact Assessment we have conducted. The Environmental Statement will be issued to the determining authority as part of our application for consent to construct and operate the proposed project. When complete, we make copies of this document available for viewing in areas local to the project.

Consultation

When we have completed our Environmental Impact Assessment and refined our design for the project we will host a further round of local consultations events to gather final feedback as we prepare to submit our application for consent.

Submission of application

After finalising our application we submit this to the determining authority.

Evaluation of application

The determining authority will review our application, including feedback received from stakeholders. This will inform their decision.

Planning decision

The determining authority will either grant permission for the renewable energy project to be constructed and operated or they will refuse permission.

Appendix 4

Tidal Power Station Ecological Safety Monitoring

Tidal power stations as opposed to thermal power stations do not emit greenhouse gases and other pollutants into the atmosphere, do not flood the surrounding territories, do not require expenditure on melioration, do not pose the threat of disasters when the dam bursts and do not present any potential threats as opposed to nuclear power stations. Tidal power has these main ecological advantages that it prevents emissions of pollutants into the atmosphere, accumulation of ash heaps, radioactive and thermal waste during the mining, transport and utilization of fuels and prevents the reduction of oxygen content in the atmosphere.

It is clear that the ecological "purity" of tidal power stations is only relative since their construction and operation, as any other human intrusion into nature, cannot remain without consequences. However, tidal power is characterized by the fact that these consequences are minimal compared to other power stations and can be considered as marginal. These consequences display positive features as well by creating recreational conditions, defending the shoreline from wave erosion, reduction in the turbulence of water flows and causing beneficial influence on the fauna and flora. Apart from that the flotation method of construction allows to remove the main works from the uninhabited region of the fragile wild nature to the existing maritime industrial center and prevent the ruinous cessation of the water exchange between the sea and the basin. Besides, the developed in Russia and world recognized model of a one basin tidal power station does not disturb the natural pace of energy production.

Studies of the influence of the Kislogubskaya tidal power station on the environment was conducted by the Murmansk Marine Biology Institute, the Institute of Fishing and Oceanography of the Polar Region, the Southern Seas Biology Institute and the Moscow State University. Ecological studies regarding the Rance tidal power station in France and the expert assessment of the following projects under consideration: Fundy (Canada), Severn and Mersey (UK), Tugursk and Mezensk (Russia) were analyzed as well.

The studies of the isolated by the dam basin of the Kislogubskaya tidal power station showed that under the free water exchange regime the water level fluctuations in the basin generally repeat that of the water level fluctuations in the sea but with a 2-3 hours phase shift. The water exchange depends on the mode of operation of the tidal power station. During the procedure of "basin cleaning" the water exchange diminishes and electricity production is reduced to one fifth of that during the natural mode of operation. The water exchange reduction leads to the restructuring of the bottom ecosystem of the bay. The length of this process was approximately ten years since the commissioning of the Kislogubskaya tidal power station and this has to be taken into consideration in the analysis of the ecological consequences of any similar project.
The ecological monitoring of the Kislaya bay that started in 1924 allowed to collect extremely valuable data for the substantiation of ecological safety of large tidal power projects both in Russia and abroad.

Tidal Power Station - Fishing Grounds Monitoring

The tidal power station dam complicates the passage of fish from the sea into the basin. However, theoretical data and tests conducted by the "Sevryba" Trust at the Kislogubskaya tidal power station (fish passage through the station dam and subsequent harvesting) showed that trade fish with the width of up to 25 cm (99% of the total) pass though the blades of the directing device and the low pressure operating wheel of the capsule type turbine with a diameter of 3,3, m rotating at 72 turns/sec. Apparently with the increase of the turbine wheel diameter to 5,3 -10 m the passage of fish will not

have any restrictions whatsoever. Apart from that the uninhibited passage of fish through the dam should be through the water passage openings that are intended for the filling up of the basin in each tidal cycle (2-2,5 hours). The totally uninhibited passage of fish will be made possible through the currently developed orthogonal hydro turbines (*already installed and successfully operating)*. These turbines will idle for water passage as the idling orthogonal turbine has the highest transfer capability. In addition, the tidal power stations dams usually have openings for the passage of fish. According to the data on the operations of tidal power stations at Rance in France and Tcjanzansan in China these are beneficial for the local marine fauna leading to increased diversity of species and fish population number in the basin.

The noted similarity of species types and biomass of the plankton in the basin and the adjacent sea at stable (design) water exchanges through the dam indicates the identity of the marine fauna in these two areas. As opposed to that differences in the composition and quantities of zooplankton in the basin and the adjacent see area were detected in the basin of Kisloguskaya tidal power station. These were caused by the significant reduction in the design water exchange through the tidal power station in the beginning of the 1980-decade. With the subsequent restoration of the water exchange the plankton biomass in the basin was restored.

The Monitoring of Erosion, Sedimentation and Icing Regimes

It was established that sharp changes in the operation of the tidal power station lead to the erosion of the bottom (up to 2-3 cm a day). However, following the designed operation regimen for 2 years all the processes stabilize, come into a dynamic equilibrium and erosion ceases. It was also shown that on average a somewhat smaller amount of sedimentation is brought into the basin, the activity of dynamic processes diminishes and no bottom deformation has been detected.

Studies show that the presence of a tidal power station results in softening of the icing regime in its basin and practically eliminates storms in it.

Monitoring of Water Salinity

Water salinity is one of the main factors determining the ecological state of the marine fauna. Monitoring of water salinity indicated that if in natural conditions fluctuations in water salinity are around 0,7%, with a tidal power station present they drop to 0,3% so as to be practically invisible. However, a tidal power station may lead to increased water stratification in the basin. The difference between the salinity of the surface water and that of the layer deeper may increase by 0,2-0,3%. This means that the stratified waters will move from their current position towards the sea but this apparently will have no practical influence.