



The Corporation of Delta
COUNCIL REPORT
Regular Meeting

To: **Mayor and Council** File No.: **P08-16**
From: **Community Planning &
Development Department**
Date: **July 14, 2010**

Solar Hot Water Ready Regulation

The following report has been reviewed and endorsed by the Chief Administrative Officer.

▪ **RECOMMENDATION:**

THAT the Ministry of Housing and Social Development be notified that Delta requests to be included in the Solar Hot Water Ready Regulation.

▪ **PURPOSE:**

The purpose of this report is to seek Council's endorsement for Delta to be included in the Solar Hot Water Ready Regulation developed by the Building and Safety Standards Branch within the Ministry of Housing and Social Development.

▪ **BACKGROUND:**

The Building and Safety Standards Branch has created a Solar Hot Water Ready Regulation that would apply only to local government jurisdictions that request inclusion (Attachment A). Where the regulation is applicable, all new single family homes would be required to be built to accommodate future installation of a solar hot water system for water heating. In order to be included, a local government must submit a Council resolution by August 1, 2010. The original deadline was June 1, 2010 as noted in the attachment, but this date has been extended to August 1, 2010.

On May 29, 2010 it was announced that Delta was selected as one of seven new Solar BC Solar Communities. The Solar Communities project is part of the Solar BC Program that has the goal of transforming the British Columbia market for solar hot water systems. Solar Communities will:

- Act as flagship communities and provide leadership to community members;
- Develop means to remove barriers to solar hot water installations;
- Help to promote and raise awareness of Solar BC to community members; and
- Provide visible solar demonstration projects.

As a Solar BC Community, Delta will receive \$5,000 to assist with meeting the objectives described above. Inclusion in the Solar Hot Water Ready Regulation would be aligned with moving forward the objectives of the Solar Communities Program within Delta.

Council Policy:

A component of Delta's Climate Change Initiative is the reduction of greenhouse gas emissions in new construction. In addition, Delta's Official Community Plan (OCP) contains policies to increase energy efficiency and reduce greenhouse gas emissions at the community scale. Delta's inclusion in the regulation would contribute towards meeting these policies as it would both encourage and remove barriers to the installation of solar hot water heating. Specific policies that the proposed regulation would support include:

- Policy 2.1.18: Promote housing and site design that contains sustainability features, improves energy efficiency and contributes to the enhancement of neighbourhoods.
- Policy 2.11.1: Reduce Delta's community wide greenhouse gas emissions by 33 percent below 2007 levels by 2020 and 80 percent below 2007 levels by 2050.
- Policy 2.11.6: Participate in senior government programs and initiatives that address climate change impacts and help municipalities plan for local-scale impacts of climate change.
- Policy 2.11.8: Promote community awareness of climate change among all sectors and the public.
- Policy 2.11.14: Encourage architects and developers to design and construct energy and water efficient buildings.
- Policy 2.11.17: Encourage green energy generation projects that are consistent with environmental and community values and are appropriately located.

▪ **DISCUSSION:**

Solar Hot Water Systems

In Delta, most hot water heating uses natural gas and approximately 30 percent of total energy use in a single family dwelling is for hot water heating. Solar hot water systems offset natural gas consumption by heating and/or preheating water through the conversion of energy from the sun to heat via solar collectors mounted on roofs. By reducing natural gas consumption, greenhouse gas emissions are reduced as well as hot water heating costs.

Solar collectors are composed of a series of tubes packaged into a 6 m² (65 ft²) rectangle that are filled with water or a water and antifreeze solution. The solution carries heat from the collectors and pumps it through a heat exchanger to a tank for storage and subsequent use. Attachment B is a schematic showing a residential solar hot water installation.

Solar Hot Water Ready Regulation

The Solar Hot Water Ready Regulation would require that all new single family dwellings are constructed to accommodate future installation of a solar hot water system. New construction would be required to:

- Provide an area of 7.29 m² (78 ft²) or more on the roof to accommodate a future solar collector;
- Provide a conduit run extending from the area adjacent to the primary water heater to the area noted above. Alternatively, the conduit run could extend to accessible attic space or an exterior wall that is adjacent to the roof area designated for solar collectors; and
- The conduit must have a minimum diameter of 50 mm if two conduit runs are provided or 100 mm if only one conduit run is provided.

The regulation specifies it does not apply where it can be shown that conditions exist that do not accommodate the effective use of solar hot water heating. For example, if a property were shaded by trees or existing buildings and would not have a suitable future mounting location for solar hot water panels, then a local government could choose to exempt that property from the regulation. Implementation of the regulation would involve an applicant illustrating that the Solar Hot Water Regulation requirements have been met at the building permit stage. Compliance with the regulation would be verified during inspection.

Delta's existing zoning regulations would allow a property owner to install a solar hot water system. In 2009, Council adopted an amendment to "Delta Zoning Bylaw No. 2750, 1977" to allow solar energy systems as an accessory use in all zones and to permit a solar energy system to extend higher than the maximum height in a zone.

It is anticipated that the additional cost to comply with the Solar Hot Water Ready Regulation would be approximately \$200 to \$350 per unit. Should a home owner wish to install a solar hot water heating system after construction, the cost would be approximately \$7,000. Financial incentives from programs such as Solar BC and Livesmart BC are available to offset the cost of purchase and installation, including a \$2,000 point-of-sale rebate through Solar BC.

Should Council endorse inclusion in the regulation it is also recommended that staff prepare education materials to assist with the implementation of the regulation. Information on the regulation, as well as information on resources to assist owners of single family dwellings to install a solar hot water ready system, could be made available to residents.

As of the date of this report, the following local governments have adopted resolutions to sign on to the Solar Hot Water Ready Regulation: Ashcroft, Chilliwack, City of North Vancouver, Colwood, Dawson Creek, District of North Vancouver, Fernie, Fort St. John, Invermere, Kelowna, New Westminster, Port Coquitlam, Tofino, Township of Langley, and Whistler. The City of Vancouver has required new homes to be solar ready under its building bylaw since 2008.

It is expected a number of additional local governments will sign on to the regulation prior to the August 1, 2010 deadline. City of Surrey staff is recommending opting in to the Solar Hot

Water Ready Regulation and this report is going to Surrey City Council for consideration on July 26, 2010.

Implications:

Financial Implications – There are no financial implications to Delta.

Interdepartmental Implications – Inspections for compliance with the Solar Hot Water Ready Regulation would be completed using existing Building and Inspections staff and completed as part of required inspections for construction.

Community Implications – Staff contacted several builders regarding the proposed Solar Hot Water Ready Regulation. In general, the builders were supportive of the regulation and the preparation of related educational materials.

Intergovernmental Implications – A resolution from Council requesting inclusion in the Solar Hot Water Heating Regulation must be submitted to the Ministry of Housing and Social Development by August 1, 2010.

▪ **CONCLUSION:**

The Ministry of Housing and Social Development has created a Solar Hot Water Ready Regulation that would require all new single family residential dwellings to be constructed to accommodate the future installation of a solar hot water heating system for water heating. At this time, it is optional for local governments to be included within the jurisdictions where the regulation will apply. Inclusion within the regulation would be supportive of the Climate Change Initiative, Delta's participation in the Solar Communities program and consistent with policies in the Official Community Plan. It is recommended that Delta request to be included in the Solar Hot Water Ready Regulation.

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▪ **ATTACHMENTS:**

- A. Solar Hot Water Ready Regulation
- B. Solar Hot Water – How does it work?

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