Part 2: Description of the Dealings and GMO(s)

Briefly describe the purpose of the Dealing (in no more than a few sentences) and proposed methods to be undertaken in the dealing (as dot points).

Purpose of the Dealing:

We seek approval to conduct all types of dealings with the GMO's described here and in the following Table of this application. That is, we wish to create, culture, propagate, grow, transport, store, possess, conduct experiments with and dispose of the proposed GMOs.

The aim of our project is to secure and maintain transgenic plants generated on dealing IBC/596/AIBN/2008 which are currently being grown in a PC2 glasshouse under dealing IBC/849/AIBN/2013. We are in the process of seeking appropriate funding to undertake research in the area of developing sugarcane as a biofactory for the production of Industrial chemicals. Maintaining these transgenic plans, is necessary, as they will be used for research in the new project should it be funded.

The transgenic plants in question are transformed with bacterial and plant genes.

Proposed methods:

Exempt dealings relevant to this Application:

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Description of NLRD dealings:

- No laboratory work will be conducted on these transgenic plants. The transgenic plants are currently in a PC2 glasshouse at the St Lucia Campus and the purpose of this NLRD is to maintain these plants or in effect the storage of the transgenic plants.

Table 2.1: is intended to generate a concise, accurate record of all the GMOs to be generated or used and the purpose of the proposed dealings. Attachment 1 provides example reference responses to the description of the GMOs. Attachment 2 provides information relating to the completion of the column headed 'NLRD Type'.

2A	2B	2C	2D	2E	2F	2G
COMMON NAME OF PARENT ORGANISM	**SCIENTIFIC NAME OF PARENT ORGANISM**	**VECTOR (S) & METHOD OF TRANSFER**	**EXEMPT HOST/ VECTOR SYSTEM?**	**IDENTITY & FUNCTION OF NUCLEIC ACID & ORGANISM OF ORIGIN**	**ORGANISMS OR TISSUES, IF ANY, TO BE USED WITH THE GMO(S) & METHOD OF EXPOSURE***	**NLRD TYPE**
Sugarcane	*Saccharum spp.*	*Standard plasmid expression vector by biolistic transformation; Non tumorigenic disarmed Ti plasmid via Agrobacterium transformation*	*no*	*Expression of biopolymer genes and metabolic pathways from various plants, bacteria, and fungi as follows:* **Selectable marker genes** *Hph – hygromycin phosphotransferase - Streptomyces hygroscopicus.* *UidA - Beta-glucuronidase - E. coli* *NptII – Neomycin phosphotransferase - E. coli* *Bar - Bialaphos resistance gene - Streptomyces hygroscopicus.* *Gfp - Green Fluorescent Protein (GFP) or variations (yellow, cyan) gene of jellyfish (Aequorea victoria).* **Biopolymer genes** *Synthetic version of NphT7 - Acetoacetyl-CoA Synthase – Streptomyces sp.* *PhbA - β-ketothiolase; PhaB – Acetoacetyl-CoA reductase; PhaC – PHB polymerase – Cupriavidus necator.* *FatB3 - capryl-ACP thioesterase - Cuphea lanceolata.* *Synthetic version of Acly - ATP citrate lyase – Rattus norvegicus.* *Synthetic version of Acn1 - acetyl-CoA synthetase – Arabidopsis thaliana* *Synpcc7942_0505 - D-fructose 1,6-bisphosphatase class 2/sedoheptulose 1,7-bisphosphatase - Synechococcus elongatus (strain PCC 7942)* **Promoter and terminator elements** *Ubiquitin gene promoter – Zea mays, Oryza sativa.* *Cabm5 promoter – Zea mays* *Sps* – Sucrose phosphate synthase promoter from *Sorghum bicolour.* *Nos (Nopaline synthase gene) – terminator sequence - Agrobacterium tumefaciens.* *RbcS – chloroplast transit peptide - Pisum sativum, Zea mays.*		*PC2(b)*

*e.g. injection, co-culture, transplantation, infection