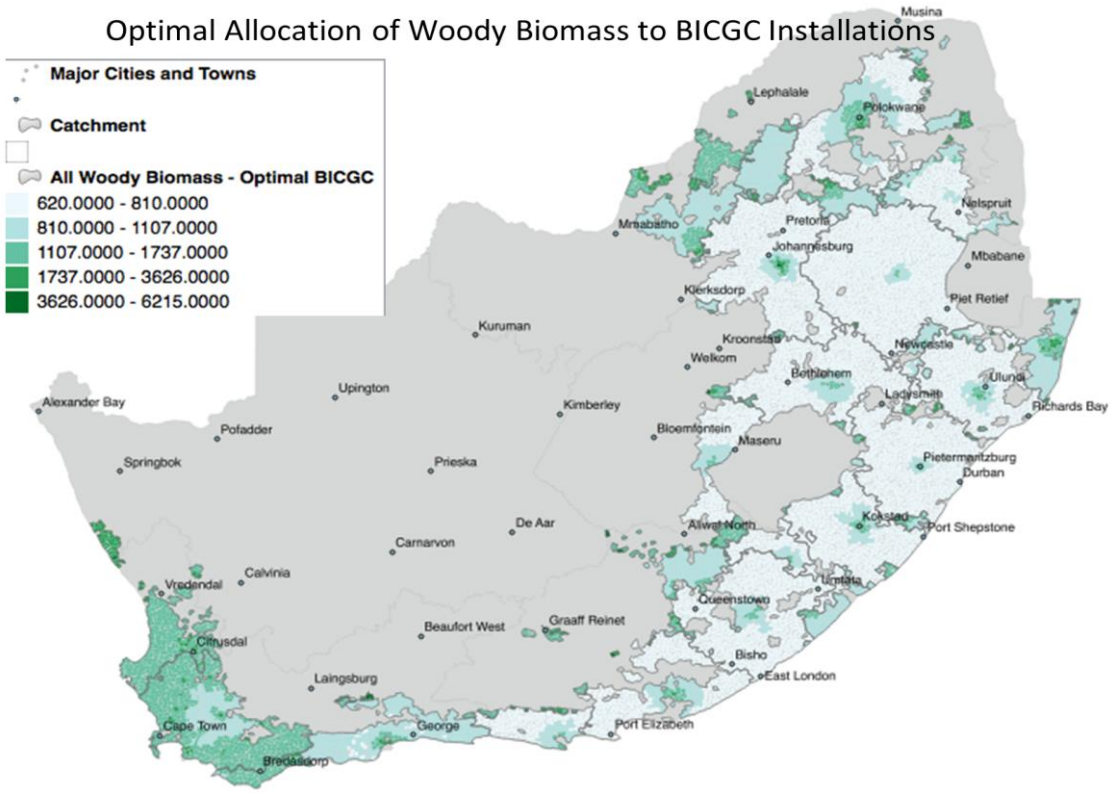
THEME: FEASIBILITY	Prepared by: Wim Hugo, SAEON

All Woody Biomass - Biomass Integrated Combined Gasification Cycle



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Date: 2015

Meta-Data

Title	*All Woody Biomass - Biomass Integrated Combined Gasification Cycle*
File(s)	*WP10_07_AWB_BIC_02.shp, WP10_07_AWB_BIC_02_catch.shp*
Author(s)	*Hugo, W*
Publication Date	*2015*
Citation	*Hugo, W. 2014. Feasibility of BioEnergy production in South Africa, BioEnergy Atlas for South Africa, DST/ SAEON 2014, Section WP10_04*
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Abstract	** Technical Challenges -* *Existing expertise and infrastructure in respect of 'Working for Water' programmes and in respect of harvesting and eradication projects required for conversion to electricity. It may be simpler and less risky to generate new sources of renewable electricity rather than converting existing power stations to co-firing.* ** Cost Challenges -* *There may be as many as 40 viable projects, all having a 20-year lifetime - with significant capital investment required. Since residues from plantations, sugar bagasse, and agricultural residues are also included, some plants may have a longer viable lifetime.* ** Policy Challenges -* *The projects are feasible and well aligned with existing expertise and infrastructure in respect of 'Working for Water' programmes. Integration with DEA 'Working for Energy' required and incorporation into IPP programmes needed.* ** Environmental Challenges -* *The net impact on greenhouse gas emissions is sizable, despite land use change effects, given the significant reduction in GHG as CO2 equivalents in comparison to coal. If natural vegetation replaces invasives at more or less the same annual increment, LUC effects are near zero.*
Keywords	*BICGC, biomass, conversion technologies, feasibility, model outputs, woody biomass*
Caveats	http://bea.dirisa.org/resources/metadata-sheets/WP10_07_META_AWB.pdf
Web Meta-Data	
Web Resource	http://app01.saeon.ac.za:8086/geoserver/BEA/wms?service=WMS&version=1.1.0&request=GetMap&layers=BEA:WP10_07_AWB_BIC_02&styles=&bbox=16.451920000028533,-34.83416989569374,32.892531746697685,-22.125030000001036&width=512&height=395&srs=EPSG:4326&format=application/ope

Methodology/ Protocol

Processing/ Provenance	*As described above*

Important Attributes

MESO_ID	Meso-zone ID
PRICOST	Optimal Allocation of Woody Biomass to BICGC Installations, R/ton
ALLOC	Catchment ID

References and Sources

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[2]	Von Maltitz, G. Estimates of Land Use Effects of Major Products and Feedstocks, Work Package 9, in BioEnergy Atlas for South Africa, W Hugo (ed), DST 2013
[3]	Witi, J and Stevens, L- Greenhouse Gas Inventory for South Africa, 2000-2010, Department of Environmental Affairs, 2013 - https://www.environment.gov.za/sites/default/files/docs/greenhousegas_invetorysouthafrica.pdf
[4]	US Environmental Protection Agency, Emission Factors for Greenhouse Gas Inventories, EPA, 2014 - http://www.epa.gov/climateleadership/documents/emission-factors.pdf
[5]	All Woody Biomass - BICGC - Catchments: http://app01.saeon.ac.za:8085/geoserver/WP10/wms?service=WMS&version=1.1.0&request=GetMap&layers=WP10:WP10_07_AWB_BIC_02_catch&styles=&bbox=17.386870191252598,-34.83416989569374,32.892531746697685,-22.57108426430068&width=512&height=404&srs=EPSG:4326&format=application/openlayers