



Oportunidades e Desafios do Mercado de Carbono Pós COP-15

Validação de Projetos de Carbono no âmbito do MDL : Projetos de Cogeração com Bagaço

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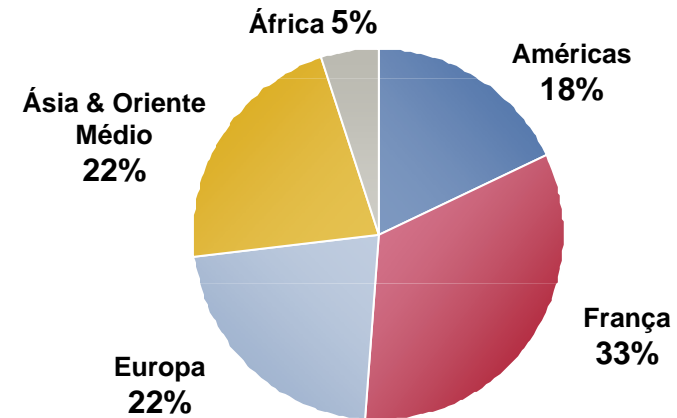
Grupo Bureau Veritas - Dados Principais



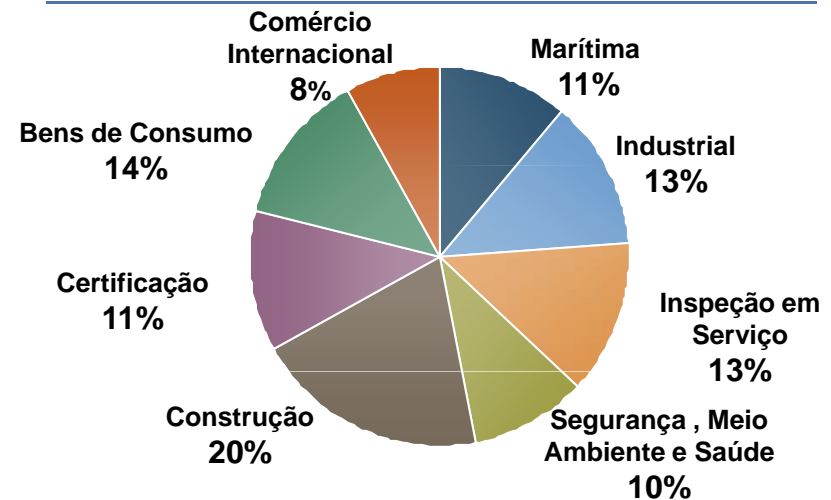
- ▶ Criado em 1828
- ▶ Líder mundial em avaliação de conformidade nas áreas de Qualidade, Saúde & Segurança, Meio Ambiente e Responsabilidade Social
 - Rede com mais de 900 escritórios em 140 países
 - Mais de 40.000 funcionários
 - Receita de 2.55 Bilhões €
- ▶ 8 Negócios Globais provendo uma gama completa de serviços
 - Inspeção, testes, auditoria, certificação, classificação, gerenciamento de riscos, outsourcing, consultoria e treinamento
- ▶ 370.000 clientes em todo o mundo

Distribuição da Receita

Por Geografia



Por Negócio Global



Grupo Bureau Veritas - Vantagens Competitivas



Rede Internacional Integrada

- ▶ Combinação única de competências internacionais e locais
- ▶ Consistência na execução dos serviços ao redor do mundo

Marca e Reputação

- ▶ Sólida reputação e reconhecimento da marca com mais de 180 anos de atuação através de:
 - Excelência técnica
 - Integridade
 - Independência
- ▶ Capacidade de recrutar os melhores talentos

Expertise Incomparável

- ▶ Extenso portfólio de creditações
- ▶ Grande conhecimento das normas internacionais e mercados onde atua

Equipes Altamente Capacitadas

- ▶ Sólida experiência e conhecimento técnico:
 - Mecânica, Civil, Elétrica, Materiais, Processos, Hidrodinâmica, etc.
- ▶ Empreendedorismo e cultura focada no cliente

Amplo Portfólio de Serviços

- ▶ Capacidade de atender a todos os requisitos de QSMS de projetos/clientes

Sistemas de Certificação Acreditados

- ▶ Certificação de Sistemas de Gestão
 - Qualidade (ISO 9001, etc.)
 - Meio Ambiente (ISO 14001, etc.)
 - Saúde & Segurança (OHSAS 18001, etc.)
 - Responsabilidade Social (SA 8000, etc.)
 - Automotivo (TS 16949, etc.)
 - Segurança Alimentar (HACCP, ISO 2200, BRC, etc.)
 - Outros

Outros Serviços

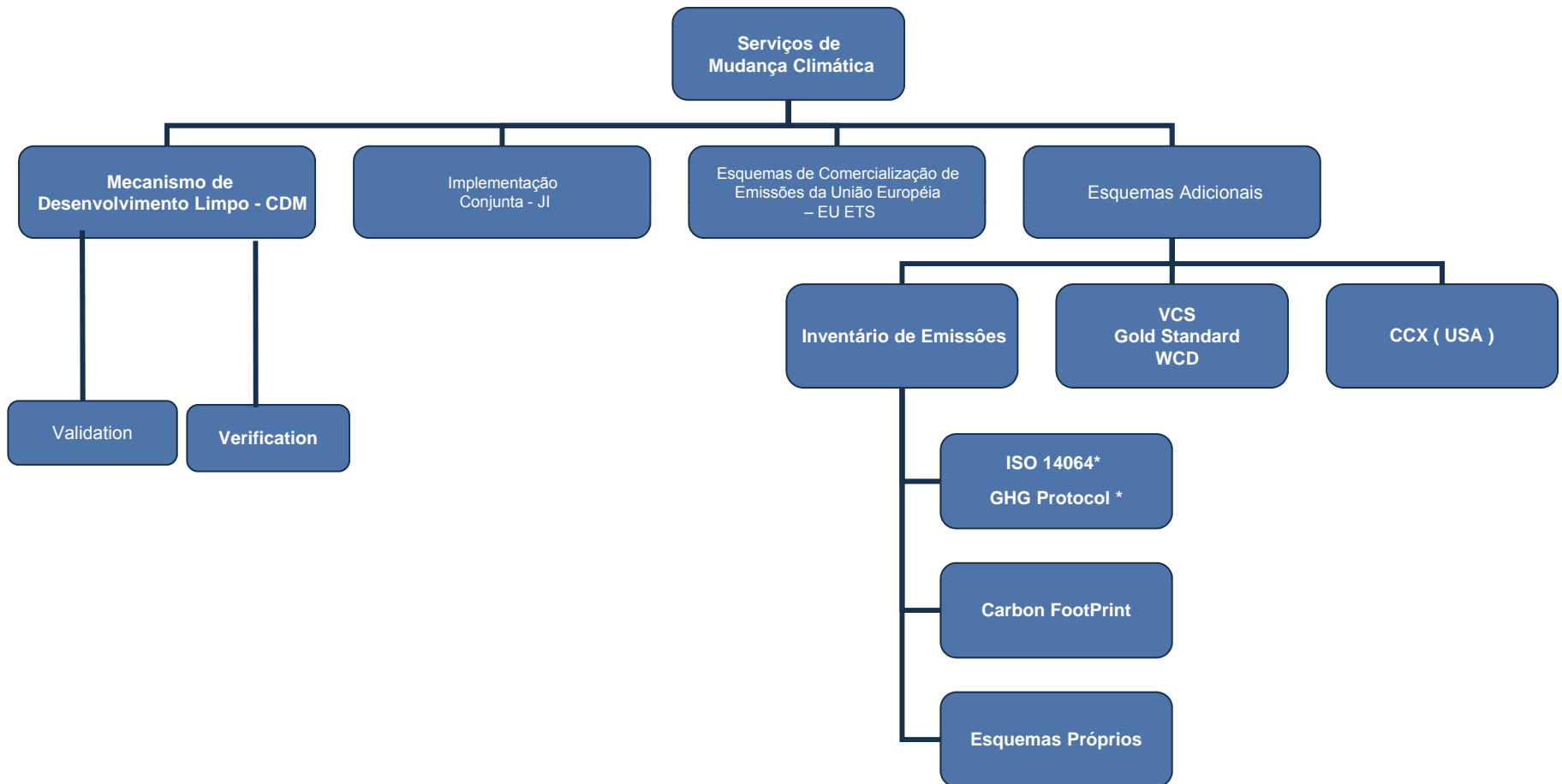
- ▶ **Validação e Verificação de Projetos de GEE's**
- ▶ **Verificação de Inventários de Emissões de GEE's**
- ▶ Auditoria dos Princípios do Equador
- ▶ Programas de Auditorias de Fornecedores
- ▶ Avaliações na Cadeia de Valor
- ▶ Auditorias de Conformidade Legal
- ▶ Verificações de Relatórios de Sustentabilidade
- ▶ Auditorias em Soluções Socio Ambientais
- ▶ Soluções em Avaliação da Conformidade



Normas públicas

Outros Requisitos

Família de Mudanças Climáticas





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Projetos de Cogeração com Bagaço



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Queima direta de biomassa: ciclos a vapor

- ▶ Os sistemas utilizados no Brasil são predominantemente ciclos a vapor(queima direta) operando em co-geração nas indústrias de cana e papel/celulose.
- ▶ A produção de energia elétrica da biomassa foi 10 TWh (1999; 3% do total de energia elétrica) sendo :
 - 4,1 TWh no setor de cana de açúcar (cogeração);
 - 2,9 TWh na indústria de papel/celulose;
 - 0,7 TWh (lenha),
 - 2,1 TWh de resíduos agrícolas.
- ▶ O setor de cana -de-açúcar passa hoje por uma transição, evoluindo de sistemas a vapor de baixa pressão (até 20 bar) para sistemas a alta pressão (até 80 bar), permitindo sair da auto-suficiência em energia elétrica para a geração de alguns GW excedentes.
- ▶ De acordo com a FAO, cerca de 1.333 Mt de cana foram produzidos em 1997, com o bagaço correspondendo a 335 Mt (25%).

Fonte: Plano Nacional de AgroEnergia 2006-2011

Projetos de Validação e Verificação

- ▶ De acordo com levantamentos da (Cogen-SP), o setor sucroalcooleiro deverá investir R\$ 45 bilhões até 2015 em projetos de cogeração de energia elétrica.
 - São cerca de 210 empreendimentos que terão uma capacidade de geração conjunta de 15 mil MWdesse total, 5 mil MW serão utilizados para consumo próprio, com o restante sendo destinado ao sistema elétrico.

Fonte : Valor Econômico – 22/10/2008

Estatística da Metodologia ACM 0006



▶ Metodologia AM 0015

- 28 projetos aprovados no Brasil

▶ Metodologia ACM 0006

- 429 projetos no mundo (incluindo Brasil)
 - 64 registrados
 - 6 em revisão
 - 19% de rejeição
 - 14 rejeitada pelo EB
 - 67 rejeitada pelo DOE (validação terminada , validação negativa , withdrawn)
- 59 projetos no Brasil
 - 1 registrado
 - 39 % de rejeição
 - 2 rejeitada pelo EB
 - 21 rejeitada pelo DOE (validação terminada , validação negativa , withdrawn)

Fonte: UNFCC Web site , consulta em 20_02_2009 e CDM Pipeline

Temas de “ Request for review , “ under review e “ rejected “ pelo EB



- ▶ The **Additionality** of the project activity
 - through an assessment of the **validation of the benchmark**, in particular the assumptions behind the calculation of the cost of debt;
 - Further clarification is required on how the DOE has validated **the suitability of input values** in line with the version 1.1 of VVM (paragraphs 109 a, b and 111 c), particularly the:
 - lower **operational hours** than other similar projects (e.g., project 2230 applies 6,975 hours);
 - net electricity supplied to the grid and auxiliary consumption;
 - heat and steam price;
 - if heat price includes the cost of the pipeline for transportation of steam to offsite location or/and the capital cost of the baseline coal fired boiler;
 - electricity tariff; electricity output
 - the price of each biomass used and fuel cost
 - higher O&M cost in comparison to the GSP PDD.
 - gross generated power which was calculated using both annual **operation hours** and plant load factor
 - Investment cost
 - confirmation that the **key input values are available at the time of investment decision**,

Temas de “ Request for review , “ under review e “ rejected “ pelo EB



- ▶ The **Additionality** of the project activity
 - the **validation of the investment analysis** , in particular:
 - the annual O&M costs;
 - the biomass associated costs and net calorific value;
 - the annual **operating hours**;
 - the stalk ash revenues.
 - given the time gap between the decision to invest in the project activity and the commencement of validation the DOE should state with what level of assurance it considers that this project activity would not have been implemented without the CDM.
 - the **sensitivity analysis**,
 - in particular the impact of a 10% increase of **free market electricity tariff** on the project IRR;
 - explain how it has determined that **the parameters used in the sensitivity analysis are the most critical and that the ranges of variations are appropriate**
 - explain why sensitivity analysis was conducted for the electricity tariff only.
 - clarify how the various stated **barriers** are prohibitive
 - **the common practice analysis, in particular the comparison of the project activity with other sugar mills exporting electricity in the country, which represent 20% of all sugar mills;**
 - the DOE is requested to confirm and substantiate the tariff applied, 3.15 Rs/kWh, in the project IRR calculation as this differs to the tariff approved, 3.50 Rs/kWh, by the Tamilnadu National Electricity Board and the Power Purchase Agreement.

Temas de “ Request for review , “ under review e “ rejected “ pelo EB



- ▶ A review of the **baseline determination**,
 - in particular **how it has been validated that the selected baseline scenario** for biomass **B1**
 - the applicability of the methodology considering the decommissioning of existing units and increased processing capacity of the sugar plant.
 - **in the baseline scenario, residues are left to decay when the financial analysis includes a purchase price for the residues**
 - justification is required for selecting the baseline alternatives for: (a) power (**P3 & P4**) and heat (**H6**) generation; and (b) biomass residues (**B1 & B3**) which should also be identified for each type of biomass used
 - clarify how it has validated that the project activity complies with the requirement of **scenario 16** as:
 - the bagasse is assumed to be left to decay without use despite 4/5 having a sale value,
 - the scenario requires that the existing units continue to operate in the same manner after installation of the new power unit.
 - validate that the project activity complies with the requirement of **scenario 14**
 - that .the existing power plant would continue to operate without significant changes, until it would need to be replaced at the end of its technical lifetime., in particular that the end of the technical lifetime is not within the proposed crediting period.

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- ▶ A review of the **baseline determination**,
 - clarifications on how they have validated baseline scenario is appropriate for the project, given that:
 - the DOE has not explained the contradiction that the biomass residues are either dumped or left to decay in absence of the project activity and at the same time carry a purchase price as applied in the investment analysis;
 - the baseline alternative **H6** has not been sufficiently substantiated;
 - it is not clear that heat, in absence of project activity, would have been generated from coal and not from any other less carbon intensive fossil fuel or renewable sources;
 - all the users of steam have not been identified and it is not clear whether PP has control over all the users of the steam;
 - there is an uncertainty that the:
 - heat displaced will not change/vary with the identification of user of the steam;
 - residual life of the boilers displaced in the baseline would be sufficiently large so that they will not be replaced anyway on its own;
 - the project boundary is steady and will not change with the identification of user/ consumer of the steam;
 - forecasted baseline emissions claimed from heat are conservative.
 - **“The implementation of the project shall not increase the bagasse production in the facility and the bagasse at the project facility should not be stored for more than one year.”** Clarification is required on how this requirement has been met.

Temas de “ Request for review , “ under review e “ rejected “ pelo EB



- ▶ The DOE is requested to clarify how it has **validated the prior consideration of CDM for the project** activity according to the VVM paragraph 100 (a) guidance, as the power purchase agreement was signed before the decision to undertake the project was made in September 2006.
- ▶ The DOE should clarify how the 25% of biomass surplus considers all the types of biomass used in the project activity according to paragraphs 17 and 18 of the General **guidance on leakage in biomass project activities**, version 03 and paragraphs 18.a, 91 and 92 of the VVM
- ▶ Clarify if the **project start date complies with the definition in the CDM glossary of terms**
- ▶ **How local stakeholders are consulted** on the benefits of the CDM
- ▶ To explain how exactly the DOE has **validated that this project activity is first of its kind**
- ▶ The monitoring plan does not specify the requirement for monitoring of the fossil fuel used within the project boundary, but the monitoring methodology applied to this project activity stipulates this requirement.
- ▶ Values
 - EFburning,CH4,k,y
 - **representative for the whole year given that the measurement was taken only within one week.**
 - regards to the requirements of the approved monitoring methodology.
 - The appropriateness of the values used for EFkm,CO2,y and COEFi (i.e. if reliable national default values are available,
 - NCV
 - the suitability of the applied NCV of the mix biomass and how it has been derived.
 - **measurement of the Net Calorific Value of the biomass used shall be carried out at reputed laboratories and according to the relevant international standards**
 - ~~As the quantity of biomass consumed is to be reported on a wet basis, the NCV reporting should be done in a consistent manner~~

Temas de “ Request for review , “ under review e “ rejected “ pelo EB



▶ Reference plants

- It had not been demonstrated to have been conservatively selected
- the applicability of the methodology through an assessment of the criteria used in the selection of reference plants
- explain how it has validated the selection of the reference plant. In doing so, further substantiation that the common practice in the region is to have boilers operating at lower pressures up to 45kg/cm² should be provided based on credible evidences.

Requests for Clarification

- ▶ **AM_CLA_0134**
 - Request for clarification of a **scenario applicability in ACM0006** for a retrofit biomass power generation plant
- ▶ **AM_CLA_0121**
 - Request for clarification of a **scenario applicability in ACM0006** for a retrofit biomass power generation plant
- ▶ **AM_CLA_0160**
 - **Definition of a reference plant in scenarios 4 and 18**
- ▶ **AM_CLA_0120**
 - **Application of the “Combined tool to identify the baseline scenario and demonstrate additionality” for a project activity where one of the alternatives is not an available option to the project participants**
- ▶ **AM_CLA_0064**
 - Request for **clarification regarding scenario 18** of ACM0006
- ▶ **AM_CLA_0065**
 - Request for clarification regarding requirement of heat generation efficiency in **scenario 18**

Requests for Clarification

▶ **AM_CLA_0139**

- Clarification for the **applicability of the scenario 12** of the methodology related to baseline units

▶ **AM_CLA_0147**

- Clarification on definition of supply side energy efficiency and use of **Scenario 11**

▶ **AM_CLA_0105**

- Clarification regarding **applicability of biomass residues alternative scenarios**

▶ **AM_CLA_0082**

- Clarification regarding applicability of the methodology, with reference to your response F-CDMAMClar_Resp_ver 01.1 - AM_CLA_0064

▶ **AM_CLA_0079**

- Clarification regarding applicability of the methodology

▶ **AM_CLA_0083**

- **For the renewal of a crediting period: Shall registered CDM projects be excluded in the construction of baseline scenarios?**
- **In the case of expansion of an existing CDM project, which is the baseline to be considered?**

▶ **AM_CLA_0035**

- Definitions and scenarios

Planta de Referência (Fonte : ABEMC 12/08/2009)



- ▶ Some scenarios in ACM0006 require the definition of a **reference plant**, which is a plant that would be used in the absence of the project activity. For scenarios 4 and 18, for instance, which are in theory applicable scenarios for project activities in Brazil, “this reference plant would have a lower efficiency of electricity generation than the project plant (e.g. by using a low-pressure boiler instead of a high-pressure boiler).”
- ▶ This definition seems to give a margin for subjective interpretation. Just as an example, one project in Brazil, was rejected, because, among other reasons, the EB considered that the *“Reference plants had not been demonstrated to have been conservatively selected as required by the methodology”*.
- ▶ This is what ACM0006 recommends: *“Consider commonly installed new biomass residue fired power plants that are common practice for new plants in the respective industry sector in the country or region. Choose the efficiency in a conservative manner, i.e. choose a higher efficiency within a plausible range of efficiencies that are reached by new plants in the relevant sector, document relevant sources of information (relevant studies, measurements and/or expert judgments) in the CDMPDD and justify the choice”*.
- ▶ **There is a need to clarify subjective terms such as “conservatively” in order to avoid different interpretations from project developers, DOEs, and EB.**

▶ EB 52 Meeting

- # 27. Taking into consideration the inputs by experts (desk reviewers), the public, and the recommendations of the Meth Panel, the Board agreed to**Approve cases:**
 - (a) **ACM0018** - "Consolidated methodology for electricity generation from biomass residues in power-only plants", based on ACM0006 and link it to scope 1 (Energy industries)
- # 32. The Board revised the following approved methodologies:
 - (e) **ACM0006:** The revision to the approved methodology ACM0006 complements the Meth Panel's recommendation for approval of the new consolidated methodology for electricity generation from biomass residues in power-only plants, which is applicable to project activities that generate electricity in biomass residue (co-) fired power-only plants. **Consequently, the revision makes the methodology ACM0006 inapplicable to power-only plants.**

▶ Workprogramme of the Meth Panel (First semester of 2010)

- Finalisation of revised combined tool , due the requested for the deconsolidation of ACM0006
 - New combined tool which will introduce more objective approaches to determine baseline scenario and demonstrate additionality
- ACM0006: Deconsolidation in power only/cogeneration/heat only methodologies and include various requests for clarifications/EB requests in the revised versions
 - Two new methodologies; one for power-only and other for cogeneration projects. The existing methodology AM0036 will have applicability of heat-only projects
- Expected end date : EB 55



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