CURRICULUM VITAE

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Jenis Kelamin	: Perempuan
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PENDIDIKAN

- 2002 – 2007 SDN Negeri 2 Truko,Bringin Kab Semarang
- 2008 – 2010 SMP Negeri 2 Pabelan, Kab Semarang
- 2011 – 2013 SMK Kristen 1, Kota Salatiga
- 2013 – Juni 2017 Fakultas Ekonomika Dan Bisnis Jurusan Akuntansi Universitas Kristen Satya Wacana, Kota Salatiga

KEMAMPUAN

- Cool Edit, Adobe Audition, Microsoft Office Word, Excel, Power Point

- Bahasa Indonesia (Aktif)

PENGALAMAN KERJA

- 2011 – Sekarang Radio Suara Salatiga Sebagai Penyiar Radio
- 2013 – 2015 Agra Mart Sebagai Kasir

KEAKTIFAN KEGIATAN

KETERAMPILAN PROFESIONAL

- 30 September 2013 Peserta Seminar *"Be A Billionaire In Stock Market Using Simple Fundamental and Technical Analysis"*
- 11-12 Maret 2014 National Seminar *On Accounting*
- 14 Januari 2015 Peserta Seminar Nasional "Pengembangan Industri Kreatif Indonesia Dalam Era Masyarakat Ekonomi ASEAN"
- 22 September 2014 Peserta Seminar Internasional "*Management of Research Project*"
- 19 Maret 2016 Peserta Seminar "Audit Internal Perbankan : Perspektif Praktisi"
- 2016 Presenter Film Dokumenter Kota Salatiga

KETERAMPILAN BERSIFAT KEMANUSIAAN

- 28-30 November 2014 Peserta Latihan Dasar Kepemimpinan Mahasiswa "*Think Smart To Lead The World*"
- 2013-2014 Mahasiswa Baru Aktif LK HMP Kelompok Studi Akuntansi (KSA)
- 2015 Panitia "*Economic's Real Different Generation Of Accountant (Elegant)*"
- 2015 Panitia Salatiga Expo
- 13, 20 & 26-28 Februari 2016 Panitia Live In 2016 "*One Spirit Million Impact*"
- 2016 Panitia Difabel Kota Salatiga
- 2016 Panitia Salatiga Expo
- 23-24 September 2016 Panitia Malam Keakraban "*Heroes* 2016"
- 2017 Panitia Reuni Smansa 80

KETERAMPILAN PENUNJANG

- 14-15 September 2013 Peserta Kegiatan “Social Evening-Fusion 2013”
- 2014 Peserta Excellent *"Show Your Expression And Your Talent As Youth Accountant"*
- 28 November 2014 Peserta Talkshow *"My Nature My Life"*
- 28 Januari 2015 Peserta Seminar Nasional "Peran Civitas Akademik Universitas Kristen Satya Wacana Dalam Pemberantas Korupsi Di Indonesia"

LAMPIRAN 1

Tabel 1

Pengungkapan Kategori Lingkungan G4 *Guidelines*

No	Kategori Lingkungan	Kode	Keterangan
1	Bahan	G4-EN1	**Bahan Yang Digunakan Berdasarkan Berat Atau Volume** a. Laporkan berat atau volume total bahan yang digunakan untuk memproduksi dan mengemas produk dan jasa utama organisasi selama periode pelaporan, berdasarkan: • Bahan tak terbarukan yang digunakan • Bahan terbarukan yang digunakan
		G4-EN2	**Persentase Bahan Yang Digunakan Yang Merupakan Bahan Input Daur Ulang** a. Laporkan persentase bahan input berupa bahan daur ulang yang digunakan untuk pembuatan produk dan jasa utama perusahaan.
2	Energi	G4-EN3	**Konsumsi Energi Dalam Organisasi** a. Laporkan konsumsi total bahan bakar dari sumber yang tak terbarukan dalam satuan joule atau kelipatannya, termasuk jenis bahan bakar yang digunakan. b. Laporkan konsumsi total bahan bakar dari sumber bahan bakar terbarukan dalam satuan joule atau kelipatannya, termasuk jenis bahan bakar yang digunakan. c. Laporkan dalam satuan joule, watt jam atau kelipatannya, total dari: • Konsumsi listrik • Konsumsi pemanas • Konsumsi pendingin • Konsumsi uap d. Laporkan dalam satuan joule, watt jam atau kelipatannya, total dari: • Listrik yang dijual

			• Pemanas yang dijual • Pendingin yang dijual • Uap yang dijual e. Laporkan konsumsi energi total dalam satuan joule atau kelipatannya. f. Laporkan standar, metodologi, dan asumsi yang digunakan. g. Laporkan sumber faktor konversi yang digunakan.
		G4-EN4	**Konsumsi Energi Di Luar Organisasi** a. Laporkan energi yang dikonsumsi di luar organisasi, dalam satuan joule atau kelipatannya. b. Laporkan standar, metodologi, dan asumsi yang digunakan. c. Laporkan sumber faktor konversi yang digunakan.
		G4-EN5	**Intensitas Energi** a. Laporkan rasio intensitas energi. b .Laporkan metrik yang spesifik organisasi (penyebut rasio) yang dipilih untuk menghitung rasio tersebut. c. Laporkan jenis energi yang dicakup dalam rasio intensitas: bahan bakar, listrik, pemanas, pendingin, uap, atau seluruhnya. d. Laporkan apakah rasio memperhitungkan energi yang dikonsumsi di dalam organisasi, di luar organisasi, atau keduanya.
		G4-EN6	**Pengurangan Konsumsi Energi** a. Laporkan jumlah pengurangan konsumsi energi yang dicapai yang merupakan hasil langsung dari inisiatif konservasi dan efisiensi, dalam satuan joule atau kelipatannya. b. Laporkan jenis energi yang termasuk dalam pengurangan: bahan bakar, listrik, pemanas, pendingin, dan uap. c. Laporkan dasar untuk penghitungan pengurangan konsumsi energi misalnya tahun dasar atau garis dasar, dan alasan pemilihannya.

			d. Laporkan standar, metodologi, dan asumsi yang digunakan.
		G4-EN7	**Pengurangan Kebutuhan Energi Pada Produk Dan Jasa** a. Laporkan pengurangan kebutuhan energi pada produk dan jasa yang dijual, yang dicapai selama periode pelaporan, dalam satuan joule atau kelipatannya. b. Laporkan dasar untuk penghitungan pengurangan konsumsi energi misalnya tahun dasar atau garis dasar, dan alasan pemilihannya. c. Laporkan standar, metodologi, dan asumsi yang digunakan.
3	Air	G4-EN8	**Total Pengambilan Air Berdasarkan Sumber** a. Laporkan total volume pengambilan air dari sumber berikut ini: • Air permukaan, termasuk air dari rawa, sungai, danau, dan laut • Air tanah • Air hujan yang dikumpulkan secara langsung dan disimpan oleh organisasi • Air limbah dari organisasi lain • Pasokan air kota atau perusahaan air lainnya b. Laporkan standar, metodologi, dan asumsi yang digunakan.
		G4-EN9	**Sumber Air Yang Secara Signifikan Dipengaruhi Oleh Pengambilan Air** a. Laporkan jumlah total sumber air yang secara signifikan terkena dampak pengambilan air berdasarkan jenis: • Ukuran sumber air • Apakah sumber tersebut merupakan kawasan lindung (secara nasional atau internasional) atau tidak • Nilai keanekaragaman hayati (seperti keragaman spesies dan endemik, jumlah spesies yang dilindungi) • Nilai atau pentingnya sumber air terhadap masyarakat lokal dan masyarakat adat

			b. Laporkan standar, metodologi, dan asumsi yang digunakan.
		G4-EN10	**Persentase Dan Total Volume Air Yang Didaur Ulang Dan Digunakan Kembali** a. Laporkan total volume air yang didaur ulang dan digunakan kembali oleh organisasi. b. Laporkan total volume air yang didaur ulang dan digunakan kembali dalam persentase total pengambilan air yang dilaporkan dalam Indikator G4-EN8. c. Laporkan standar, metodologi, dan asumsi yang digunakan.
4	Keanekaragaman Hayati	G4-EN11	**Lokasi-Lokasi Operasional Yang Dimiliki, Disewa, Dikelola Di Dalam, Atau Yang Berdekatan Dengan, Kawasan Lindung Dan Kawasan Dengan Nilai Keanekaragaman Hayati Tinggi Di Luar Kawasan Lindung.** a. Laporkan informasi berikut untuk setiap lokasi operasional yang dimiliki, disewa, dikelola di dalam, atau berdekatan dengan, kawasan lindung dan kawasan dengan nilai keanekaragaman hayati tinggi di luar kawasan lindung: • Lokasi geografis • Lahan di bawah permukaan dan bawah tanah yang mungkin dimiliki, disewa, atau dikelola oleh organisasi • Posisi dalam hubungannya dengan kawasan lindung (di dalam, berdekatan dengan, atau terdapat bagian • dari kawasan lindung) atau kawasan dengan nilai keanekaragaman hayati tinggi di luar kawasan lindung • Jenis operasi (kantor, pabrik atau produksi, atau pertambangan) • Ukuran lokasi operasional dalam satuan km2 • Nilai keanekeragaman hayati dicirikan berdasarkan: – Atribut kawasan lindung atau kawasan dengan nilai

			keanekaragaman hayati yang tinggi di luar kawasan lindung (ekosistem darat, air tawar, atau laut) – Penetapan status perlindungan (seperti IUCN Protected Area Management Categories67, Konvensi Ramsar78, peraturan nasional)
		G4-EN12	**Uraian Dampak Signifikan Kegiatan, Produk, Dan Jasa Terhadap Keanekaragaman Hayati Di Kawasan Lindung Dan Kawasan Dengan Nilai Keanekaragaman Hayati Tinggi Di Luar Kawasan Lindung** a. Laporkan sifat dampak langsung dan tidak langsung yang signifikan pada keanekaragaman hayati yang dikaitkan pada satu atau beberapa dari hal berikut ini:: • Pembangunan atau penggunaan pabrik produksi, tambang, dan infrastruktur transportasi • Polusi (masuknya zat-zat yang tidak secara alamiah terjadi dalam habitat dari titik tertentu dan non-titik) • Masuknya spesies pengganggu, hama, dan wabah penyakit • Berkurangnya spesies • Perubahan habitat • Perubahan proses ekologis di luar jangkauan variasi alam (seperti salinitas atau perubahan tinggi air, tanah) b. Laporkan dampak positif dan negatif, langsung dan tidak langsung, yang signifikan dengan referensi sebagai berikut: • Spesies yang terkena dampak • Luasan kawasan terkena dampak • Durasi dampak • Keterpulihan atau ketidakpulihan dampak
		G4-EN13	**Habitat Yang Dilindungi Dan Dipulihkan** a. Laporkan ukuran dan lokasi semua kawasan habitat yang dilindungi atau kawasan yang dipulihkan, dan apakah keberhasilan tindakan pemulihan telah atau disetujui oleh ahli independen eksternal. b. Laporkan apakah ada kemitraan dengan pihak ketiga

			untuk melindungi atau memulihkan kawasan habitat yang berbeda dari lokasi yang diawasi organisasi dan upaya-upaya yang telah dilakukan untuk pemulihan dan perlindungan. c. Laporkan status dari setiap kawasan berdasarkan kondisinya pada penutupan periode pelaporan. d. Laporkan standar, metodologi, dan asumsi yang digunakan.
		G4-EN14	**Jumlah Total Spesies Dalam Iucn Red List Dan Spesies Dalam Daftar Spesies Yang Dilindungi Nasional Dengan Habitat Di Tempat Yang Dipengaruhi Operasional, Berdasarkan Tingkat Risiko Kepunahan** a. Laporkan jumlah spesies IUCN Red List dan spesies dalam daftar spesies yang dilindungi nasional dengan habitat di wilayah yang dipengaruhi oleh operasional, berdasarkan tingkat risiko kepunahan: • Kritis (critically endangered) • Genting (endangered) • Rentan (vulnerable) • Hampir terancam (near threatened) • Berisiko rendah (least concern)
5	Emisi	G4-EN15	**Emisi Gas Rumah Kaca (Grk) Langsung (Cakupan 1)** a. Laporkan emisi bruto GRK langsung (Cakupan 1) dalam satuan metrik ton setara CO2, tidak termasuk dari perdagangan GRK, seperti pembelian, penjualan, atau pengalihan offset atau pertukaran. b. Laporkan gas yang diperhitungkan dalam kalkulasi (CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, atau seluruhnya). c. Laporan emisi CO2 biogenik dalam satuan metrik ton setara CO2 terpisah dari emisi bruto GRK langsung (Cakupan 1). d. Laporkan tahun dasar yang dipilih, alasan pemilihan tahun dasar tersebut, emisi pada tahun dasar, dan konteks untuk perubahan apa pun yang signifikan pada

			emisi yang mengakibatkan kalkulasi ulang pada emisi tahun dasar. e. Laporkan standar, metodologi, dan asumsi yang digunakan. f. Laporkan acuan sumber faktor emisi yang digunakan dan tingkat potensi pemanasan global (GWP) yang digunakan atau referensi sumber GWP. g. Laporkan pendekatan pengkonsolidasian yang dipilih untuk emisi (porsi saham, kontrol finansial, kontrol operasional).
		G4-EN16	**EMISI GAS RUMAH KACA (GRK) ENERGI TIDAK LANGSUNG (CAKUPAN 2)** a. Laporkan emisi GRK tidak langsung (Cakupan 2) dari energi bruto dalam satuan metrik ton setara CO2, tidak termasuk dari perdagangan GRK, seperti pembelian, penjualan, atau pengalihan offset atau pertukaran. b. Laporkan gas-gas yang disertakan dalam penghitungan, jika tersedia. c. Laporkan tahun dasar yang dipilih, alasan pemilihan tahun dasar tersebut, emisi pada tahun dasar, dan konteks untuk perubahan apa pun yang signifikan pada emisi yang mengakibatkan kalkulasi ulang pada emisi tahun dasar. d. Laporkan standar, metodologi, dan asumsi yang digunakan. e. Laporkan sumber faktor emisi yang digunakan dan tingkat potensi pemanasan global (GWP) yang digunakan atau referensi sumber GWP, jika tersedia. f. Laporkan pendekatan konsolidasi yang dipilih untuk emisi (porsi saham, kontrol finansial, kontrol operasional)
		G4-EN17	**EMISI GAS RUMAH KACA (GRK) TIDAK**

			LANGSUNG LAINNYA (CAKUPAN 3) a. Laporkan emisi bruto GRK tidak langsung lainnya (Cakupan 3) dalam satuan metrik ton setara CO2, tidak termasuk emisi tidak langsung dari dihasilkan dari listrik, pemanas, pendingin, dan uap yang dibeli atau diperoleh yang digunakan perusahaan (emisi tidak langsung ini dilaporkan dalam Indikator G4-EN16). Kecualikan perdagangan GRK apa pun, seperti pembelian, penjualan, atau pengalihan offset atau pertukaran. b. Laporkan gas-gas yang disertakan dalam penghitungan, jika tersedia. c. Laporan emisi CO2 biogenik dalam satuan metrik ton setara CO2 terpisah dari emisi GRK bruto tidak langsung (Cakupan 3) lainnya. d. Laporkan kategori emisi tidak langsung lainnya (Cakupan 3) dan aktivitas yang diperhitungkan dalam kalkulasi. e. Laporkan tahun dasar yang dipilih, alasan pemilihan tahun dasar tersebut, emisi pada tahun dasar, dan konteks untuk perubahan apa pun yang signifikan pada emisi yang mengakibatkan kalkulasi ulang pada emisi tahun dasar. f. Laporkan standar, metodologi, dan asumsi yang digunakan. g. Laporkan acuan sumber faktor emisi yang digunakan dan tingkat potensi pemanasan global (GWP) yang digunakan atau referensi sumber GWP, jika tersedia.
		G4-EN18	**Intensitas Emisi Gas Rumah Kaca (Grk)** a. Laporkan rasio intensitas emisi GRK. b. Laporkan metrik khusus organisasi (rasio penyebut) yang dipilih untuk menghitung rasio tersebut. c. Laporkan jenis emisi GRK yang termasuk dalam rasio intensitas: langsung (Cakupan 1), energi tidak langsung (Cakupan 2), tidak langsung lainnya

			(Cakupan 3). d.Laporkan gas-gas yang termasuk dalam penghitungan.
		G4-EN19	**Pengurangan Emisi Gas Rumah Kaca (Grk)** a. Laporkan jumlah pengurangan emisi GRK yang dicapai sebagai hasil langsung inisiatif pengurangan emisi, dalam satuan metrik ton setara CO2. b. Laporkan gas-gas yang termasuk dalam penghitungan (CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, atau seluruhnya). c. Laporkan tahun dasar atau garis dasar yang dipilih serta alasan pemilihannya. d. Laporkan standar, metodologi, dan asumsi yang digunakan. e. Laporkan apakah pengurangan emisi GRK terjadi dalam emisi langsung (Cakupan 1), emisi energi tidak langsung (Cakupan 2), emisi tidak langsung lainnya (Cakupan 3).
		G4-EN20	**Emisi Bahan Perusak Ozon (Bpo)** a. Laporkan produksi, impor, dan ekspor bahan perusak ozon (BPO) dalam satuan metrik ton setara CFC-11. b. Laporkan bahan-bahan yang termasuk dalam penghitungan. c. Laporkan standar, metodologi, dan asumsi yang digunakan. d. Laporkan sumber acuan faktor emisi yang digunakan.
		G4-EN21	**NOx, SOx, Dan Emisi Udara Signifikan Lainnya** a. Laporkan jumlah emisi udara yang signifikan, dalam satuan kilogram atau kelipatannya untuk setiap hal berikut: • NOx • SOx • Pencemar organik persisten (POP) • Senyawa organik volatil (VOC) • Pencemar udara berbahaya (HAP) • Debu (PM)

			• Kategori emisi udara standar lainnya yang diidentifikasi dalam peraturan yang relevan b. Laporkan standar, metodologi, dan asumsi yang digunakan. c. Laporkan sumber acuan faktor emisi yang digunakan.
6	Efluen dan Limbah	G4-EN22	**Total Air Yang Dibuang Berdasarkan Kualitas Dan Tujuan** a. Laporkan volume total air terencana dan tidak terencana yang dibuang berdasarkan: • Tujuan Kualitas air termasuk metode penanganan • Apakah digunakan kembali oleh organisasi lain atau tidak b. Laporkan standar, metodologi, dan asumsi yang digunakan.
		G4-EN23	**Bobot Total Limbah Berdasarkan Jenis Dan Metode Pembuangan** a. Laporkan bobot total limbah berbahaya dan tidak berbahaya, dengan metode pembuangan sebagai berikut: • Penggunaan kembali • Daur ulang • Pengomposan • Pemulihan, termasuk pemulihan energi • Pembakaran (pembakaran massa) • Injeksi sumur dalam • Tempat pembuangan akhir (TPA) • Penyimpanan di tempat • Lainnya (ditentukan oleh organisasi) b. Laporkan bagaimana metode pembuangan limbah ditentukan: • Dibuang langsung oleh organisasi atau jika tidak, dikonfirmasi secara langsung • Informasi yang diberikan oleh kontraktor pembuangan limbah • Standar organisasi untuk kontraktor pembuangan

			limbah
		G4-EN24	**Jumlah Dan Volume Total Tumpahan Signifikan** a. Laporkan jumlah dan volume total tumpahan signifikan yang tercatat. b. Untuk tumpahan yang dilaporkan dalam laporan keuangan organisasi, laporkan informasi tambahan berikut untuk setiap kejadian tumpahan tersebut: • Lokasi tumpahan • Volume tumpahan • Bahan yang tumpah, dikategorikan menurut: – Tumpahan minyak (permukaan tanah atau air) – Tumpahan bahan bakar (permukaan tanah atau air) – Tumpahan limbah (permukaan tanah atau air) – Tumpahan zat kimia (sebagian besar permukaan tanah atau air) – Lainnya (ditentukan oleh organisasi) c. Laporkan dampak tumpahan yang signifikan.
		G4-EN25	**Bobot Limbah Yang Dianggap Berbahaya Menurut Ketentuan Konvensi Basel2 Lampiran I, Ii, Iii, Dan Viii Yang Diangkut, Diimpor, Diekspor, Atau Diolah, Dan Persentase Limbah Yang Diangkut Untuk Pengiriman Internasional** a. Laporkan bobot total untuk tiap-tiap hal berikut ini: • Limbah berbahaya yang diangkut • Limbah berbahaya yang diimpor • Limbah berbahaya yang diekspor • Limbah berbahaya yang diolah b. Laporkan persentase limbah berbahaya yang dikirimkan internasional.
		G4-EN26	**Identitas, Ukuran, Status Lindung, Dan Nilai Keanekaragaman Hayati Dari Badan Air Dan Habitat Terkait Yang Secara Signifikan Terkena Dampak Dari Air Buangan Dan Limpasan Dari Organisasi**

			a. Laporkan badan air dan habitat terkait yang secara signifikan terkena dampak air buangan berdasarkan kriteria yang dijelaskan pada bagian Penyusunan di bawah ini, dengan menambahkan informasi tentang: • Ukuran badan air dan habitat terkait • Apakah badan air dan habitat terkait merupakan sebagai kawasan lindung (secara nasional atau internasional) atau tidak • Nilai keanekaragaman hayati (seperti jumlah total spesies yang dilindungi)
7	Produk dan Jasa	G4-EN27	**Tingkat Mitigasi Dampak Terhadap Dampak Lingungan Produk Dan Jasa** a. Laporkan secara kuantitatif sejauh mana dampak lingkungan dari produk dan jasa yang telah dimitigasi selama periode pelaporan. b. Jika menggunakan angka-angka yang dikaitkan pada penggunaan, laporkan asumsi dasar yang dipakai terkait pola konsumsi atau faktor normalisasi.
		G4-EN28	**Persentase Produk Yang Terjual Dan Kemasannya Yang Direklamasi Menurut Kategori** a. Laporkan persentase produk dan bahan kemasannya yang direklamasi untuk setiap kategori produk. b. Laporkan bagaimana data untuk Indikator ini diperoleh.
8	Kepatuhan	G4-EN29	**Nilai Moneter Denda Signifikan Dan Jumlah Total Sanksi Non-Moneter Karena Ketidakpatuhan Terhadap Undang-Undang Dan Peraturan Lingkungan** a. Laporkan denda dan sanksi non-moneter yang signifikan dalam bentuk: • Nilai moneter total dari denda yang signifikan • Jumlah total sanksi non-moneter • Kasus yang diajukan melalui mekanisme penyelesaian sengketa b. Bila organisasi tidak mengidentifikasi ketidakpatuhan apa pun terhadap undang-undang atau peraturan,

			pernyataan singkat mengenai fakta ini sudah cukup.
9	Transportasi	G4-EN30	**Dampak Lingkungan Signifikan Dari Pengangkutan Produk Dan Barang Lain Serta Bahan Untuk Operasional Organisasi, Dan Pengangkutan Tenaga Kerja** a. Laporkan dampak lingkungan yang signifikan dari pengangkutan produk dan barang lain serta bahan untuk operasional organisasi, dan pengangkutan tenaga kerja. Jika data kuantitatif tidak diberikan, laporkan alasannya. b. Laporkan bagaimana dampak lingkungan dari pengangkutan produk, tenaga kerja organisasi, dan barang serta bahan lainnya dikurangi. c. Laporkan kriteria dan metodologi yang digunakan untuk menentukan mana dampak lingkungan yang signifikan.
10	Lain-lain	G4-EN31	**Total Pengeluaran Dan Investasi Perlindungan Lingkungan Berdasarkan Jenis** a. Laporkan total pengeluaran perlindungan lingkungan berdasarkan: • Biaya pembuangan limbah, pengolahan emisi, dan remediasi • Biaya pencegahan dan manajemen lingkungan
11	Asesmen Pemasok atas Lingkungan	G4-EN32	**Persentase Penapisan Pemasok Baru Menggunakan Kriteria Lingkungan** a. Laporkan persentase penapisan pemasok baru menggunakan kriteria lingkungan.
		G4-EN33	**Dampak Lingkungan Negatif Signifikan Aktual Dan Potensial Dalam Rantai Pasokan Dan Tindakan Yang Diambil** a. Laporkan jumlah pemasok yang harus menjalani asesmen dampak lingkungan. b. Laporkan jumlah pemasok yang diidentifikasi memiliki dampak negatif signifikan aktual dan potensial terhadap lingkungan. c. Laporkan dampak lingkungan negatif signifikan aktual

			dan potensial yang teridentifikasi pada rantai pasokan. d. Laporkan persentase pemasok yang diidentifikasi memiliki dampak negatif signifikan aktual dan potensial terhadap lingkungan yang telah disepakati untuk diperbaiki berdasarkan hasil asesmen yang dilakukan. e. Laporkan persentase pemasok yang diidentifikasi memiliki dampak negatif signifikan aktual dan potensial terhadap lingkungan yang diputuskan hubungannya berdasarkan hasil asesmen yang dilakukan, beserta alasannya.
12	Mekanisme Pengaduan Masalah Lingkungan	G4-EN34	**Jumlah Pengaduan Tentang Dampak Lingkungan Yang Diajukan, Ditangani, Dan Diselesaikan Melalui Mekanisme Pengaduan Resmi** a. Laporkan jumlah total pengaduan tentang dampak lingkungan yang diajukan melalui mekanisme pengaduan resmi selama periode pelaporan. b. Dari pengaduan yang teridentifikasi, laporkan jumlah yang: • Ditangani selama periode pelaporan • Diselesaikan selama periode pelaporan c. Laporkan jumlah total pengaduan tentang dampak lingkungan yang diajukan sebelum periode pelaporan yang telah diselesaikan selama periode pelaporan.

LAMPIRAN 2

ASPEK: BAHAN

G4-EN1 Berat atau volume bahan yang digunakan

Asia Pulp & Paper

Gambar 1

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,462,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,796
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,646,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1[4]	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2[4]		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,616
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	944
	Reused[6]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill		4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

[1] Paper production in 2013 & 2014 already included packaging (not recorded separately)
[2] Tissue production in 2014 was revised to include Univenus Perawang
[3] Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
[4] Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
[5] Started in 2014 we categorised reused, recycled and recovered into one category
[6] Started in 2015 we include incinerated into one category with reused, recycled and recovered

LAMPIRAN 3

G4-EN2 Persentase Bahan Yang Digunakan Yang Merupakan Bahan Input Daur Ulang

Asia Pulp & Paper

Gambar 1

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,646,712	100,764,818	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1*	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2*		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[4]		0	34,932	30,639
	Recovered		0	0	944
	Reused[4]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill	tonnes	4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

*Paper production in 2013 & 2014 already included packaging (not recorded separately)
*Tissue production in 2014 was revised to include Univenus Perawang
*Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
*Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
*Started in 2014 we categorised reused, recycled and recovered into one category
*Started in 2015 we include incinerated into one category with reused, recycled and recovered

LAMPIRAN 4

ASPEK: ENERGI

G4-EN3 Konsumsi energi dalam organisasi

PT Pupuk Indonesia

Gambar 1

Pemakaian Gas [G4-EN3]
Gas Consumption

dalam MMBTU | *in MMBTU*

Unit Bisnis *Business Unit*	2015	2014	2013
PT Petrokimia Gresik	21,948,064	21,428,416	23,688,348
PT Pupuk Kujang	33,469,288	32,578,253	32,880,134
PT Pupuk Kalimantan Timur	85,561,045	86,232,522	85,267,301
PT Pupuk Iskandar Muda	18,853,616	15,925,936	18,853,616
PT Pupuk Sriwidjaja Palembang	74,109,828	76,208,072	75,663,822
Total	233,941,842	233,941,842	236,353,221

Gambar 2

Pemakaian Batu Bara [G4-EN3]
Coal Consumption

Unit Bisnis *Business Unit*	Satuan *Unit*	2015	2014	2013
PT Petrokimia Gresik	Ton	209,954	286,989	266,848
	GigaJoule	5,150,171	7,039,840	6,545,781
PT Pupuk Kalimantan Timur	Ton	622,036	609,104	232,442
	GigaJoule	10,930,924	10,703,676	4,084,668
Total	Ton	831,990	896,093	499,290
	GigaJoule	16,081,095	17,743,516	10,630,449

Gambar 3

Pemakaian Listrik [G4-EN3]
Power Consumption

Unit Bisnis *Business Unit*	Satuan *Unit*	2015	2014	2013
PT Pupuk Indonesia (Persero)	KWH	177,372	125,889	118,925
	GigaJoule	638.53	453.2	428.13
PT Petrokimia Gresik	KWH	690,478,689	629,937,699	608,025,700
	GigaJoule	2,486,832	2,267,775	2,188,892
PT Pupuk Kujang	KWH	90,517,795	98,688,914	92,723,604
	GigaJoule	325,864	355,280	333,805
PT Pupuk Kalimantan Timur	KWH	102,732	117,385	N/A
	GigaJoule	369.83	422.58	N/A
PT Pupuk Iskandar Muda	KWH	54,752,140	46,993,500	60,725,490
	GigaJoule	197,107.55	169,176.46	218,611.59
PT Pupuk Sriwidjaja Palembang	KWH	294,965,649	285,461,640	285,925,258
	GigaJoule	1,061,906.06	1,027,690.68	1,029,359.75

Gambar 4

Pemakaian BBM Kendaraan Operasional [G4-EN3]
Fuel Consumption of Operational Vehicles

Unit Bisnis *Business Unit*	Satuan *Unit*	2015	2014	2013
PT Petrokimia Gresik	Liter	1,266,591	909,560	876,566
	GigaJoule	45.51	32.39	29.43
PT Pupuk Kujang	Liter	375,024	398,329	448,959
	GigaJoule	17,356.70	15,399.40	17,356.70
PT Pupuk Kalimantan Timur	Liter	489,372	551,607	27,141
	GigaJoule	16,442.90	18,534.00	911.94
PT Pupuk Iskandar Muda	Liter	108,320	100,330	97
	GigaJoule	4,535,135.05	4,200,621.88	4,044.16
PT Pupuk Sriwidjaja Palembang	Liter	465,490	632,175	786,131
	GigaJoule	16,692.48	22,669.77	28,190.66

Asia Pulp & Paper

Gambar 5

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,960,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,646,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1*	tCO_2e	10,661,320	10,488,940	9,834,319
	Scope 2*		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO_2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m^3	236,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m^3	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[4]		0	34,932	30,639
	Recovered		0	0	944
	Reused[4]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill		4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

*Paper production in 2013 & 2014 already included packaging (not recorded separately)
*Tissue production in 2014 was revised to include Universus Peralwang
*Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
*Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
*Started in 2014 we categorised reused, recycled and recovered into one category
*Started in 2015 we include incinerated into one category with reused, recycled and recovered

Bio Farma

Gambar 6

Tabel Konsumsi Energi listrik 2014 dan 2015

TAHUN	BULAN	PLN I (kWh)	PLN II (kWh)	GENSET (kWh)
2014	Januari	1.295.736	637.328	373.220
	Februari	1.106.060	590.060	423.500
	Maret	1.209.804	660.472	479.300
	April	1.183.212	641.420	435.000
	Mei	1.186.672	707.876	425.700
	Juni	1.054.748	648.548	646.700
	Juli	977.040	632.848	675.100
	Agustus	1.002.868	650.532	725.500
	September	1.011.228	667.676	688.700
	Oktober	1.046.500	676.720	753.800
	November	887.408	772.052	761.600
	Desember	1.085.072	688.312	631.000
Total			28.039.312	

Gambar 7

TAHUN	BULAN	PLN I (kWh)	PLN II (kWh)	GENSET (kWh)
2015	Januari	975.896	667.700	722.300
	Februari	859.816	618.800	724.600
	Maret	937.636	676.708	809.100
	April	880.388	661.132	762.900
	Mei	935.988	669.976	823.320
	Juni	858.888	625.140	916.999
	Juli	789.844	580.776	824.800
	Agustus	789.844	580.776	935.910
	September	884.024	606.344	870.700
	Oktober	946.604	696.680	807.800
	November	890.160	600.864	857.000
	Desember	832.244	482.948	1.004.000
Total			28.108.605	

LAMPIRAN 5

G4-EN4 Konsumsi energi di luar organisasi

Asia Pulp & Paper

Gambar 1

	Unit	2015	2014	2013
Renewables power generation	GJ	105,646,712	100,764,018	103,368,821
	%	46%	46%	47%

LAMPIRAN 6

G4-EN5 Intensitas energi

Asia Pulp & Paper

Gambar 1

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,196
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,646,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1[4]	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2[4]		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	944
	Reused[6]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill		4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

[1] Paper production in 2013 & 2014 already included packaging (not recorded separately)
[2] Tissue production in 2014 was revised to include Univenus Perawang
[3] Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
[4] Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
[5] Started in 2014 we categorised reused, recycled and recovered into one category
[6] Started in 2015 we include incinerated into one category with reused, recycled and recovered

PT Bio Farma (Persero)

Gambar 2

Ikhtisar Konsumsi Energi Produksi dan Penunjang

TAHUN	KONSUMSI TOTAL (kWh)	KONSUMSI PRODUKSI (kWh)	KONSUMSI PENUNJANG (kWh)
2014	28.039.312	17.305.725,37	10.733.586,63
2015	28.108.605	17.016.720,76	11.084.284,24

Maka intensitas pemakaian energi terkait produksi di Bio Farma 2015 dan 2014 adalah sebagai berikut:

TAHUN	KONSUMSI ENERGI (kWh)	JUMLAH *BATCH* PRODUKSI (kWh)	INTENSITAS KONSUMSI ENERGI (kWh)
2014	17.305.725,37	1314	13.170,26
2015	17.016.720,76	1337	12.727,5

LAMPIRAN 7

G4-EN6 Pengurangan konsumsi energy

Asia Pulp & Paper

Gambar 1

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,666,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1[4]	tCO2e	10,661,320	10,488,960	9,834,319
	Scope 2[4]		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	944
	Reused[6]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill	tonnes	4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

[1] Paper production in 2013 & 2014 already included packaging (not recorded separately)
[2] Tissue production in 2014 was revised to include Universe Perawang
[3] Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
[4] Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
[5] Started in 2014 we categorised reused, recycled and recovered into one category
[6] Started in 2015 we include incinerated into one category with reused, recycled and recovered

PT Bio Farma (Persero)

Gambar 2

Program Peghematan Energi Tahun 2015

NO.	PROGRAM	PENGHEMATAN
1.	Pemasangan *Timer Control* pada 32 *cooling system* AHU, sehingga pada malam hari *cooling system* AHU pada kondisi *off*	Penghematan energi listrik: 176.640 kWh/bulan
2.	Pemasangan *inverter* pada pompa *Chiller* di Gedung Polio-Campak dan Gedung Pengemasan	Penghematan energi listrik: 1958,4 kWh/bulan (Gd.Pengemasan) dan 5947,2 kWh/bulan(Gd. Polio-Campak). Total penghematan: 7.905,6 kWh/bulan
3.	Pemasangan *inverter* dan *night mode* pada 25 *Laminar Air Flow*	Penghematan energi listrik: 7.303,68 kWh/bulan
4.	Peningkatan kesadaran/*awareness* karyawan dalam mematikan alat-alat di kantor jika sedang tidak digunakan	Penghematan energi listrik: 9.870 kWh/bulan
5.	Penggunaan media pendingin yang lebih ramah lingkungan dan hemat energi pada 2 *Cold Room* dan *AC Split*, semula R22 menjadi *Musicool Hidrokarbon*	Mengurangi penggunaan bahan kimia perusak ozon Penghematan energi listrik: 1.305,15 kWh/bulan
6.	Penggantian lampu TL menjadi lampu hemat energi LED	Penghematan energi listrik: 1.085,28 kWh/bulan
7.	Sosialisasi pengurangan emisi CO_2 oleh pembicara/narasumber ahli dalam hal pengurangan energi dan emisi CO_2	Meninghathan kepedulian karyawan terhadap perilaku hemat energi haltannya dengan pengurangan emisi CO_2
8.	Kampanye penghematan penggunaan listrik, air dan solar oleh manajemen Bio Farma dan melalui berbagai media dalam perusahaan	Meninghathan kesadaran dan perilaku karyawan dalam upaya penghematan energi dan sumber daya alam
9.	Penggantian Lampu halaman (taman) dengan penggunaan *Solar cell* dan Lampu LED dilenghapi *Photo cell*	Penghematan energi listrik: 2.160 kWh/bulan
10.	Memasang *timer control* pada 70 *dispenser* air minum	Penghematan energi listrik: 1.177,05 kWh/bulan
11.	Pemanfaatan kembali (*Recovery*) Energi *Exhaust Air* dari Ruangan Produksi Vaksin HIB dan Pertusis	Penghematan energi listrik: 21.600 kWh/bulan
12.	Pemasangan Pompa *solar cell* dari *Raw Water* ke bak penampungan	Penghematan energi dari *solar cell*: 480 kWh/bulan
13.	Pemasangan Lampu LED, Sensor Gerak dan *Solar Cell* di Gedung Publik 2 *basement* 1, 2 dan 3	Penghematan energi hasil dari LED & Sensor Gerak: 4.880,9 kWh/bulan Penghematan energi listrik *Solar Cell*: 1.265,80kWh Jadi total penghematan bulan Desember 2015: 6.146,7 kWh
14.	Pemasangan *Selective Control* pada *elevator* di Gedung Publik 2	Penghematan energi listrik: 316,8kWh/bulan

Gambar 3

Tabel Penghematan Listrik 2014-2015

TAHUN	BULAN	JUMLAH PENGGUNAAN LISTRIK (kWh) JIKA TIDAK ADA PROGRAM EFISIENSI	JUMLAH PENGGUNAAN LISTRIK (kWh) DENGAN ADANYA PROGRAM EFISIENSI	JUMLAH PENGHEMATAN LISTRIK (kWh) DENGAN ADANYA PROGRAM EFISIENSI	% PENGHEMATAN LISTRIK
2014	Januari	2.536.745	2.306.284	230.461	9,99%
	Februari	2.350.081	2.119.620	230.461	10,87%
	Maret	2.580.896	2.349.576	231.320	9,85%
	April	2.490.952	2.259.632	231.320	10,24%
	Mei	2.551.568	2.320.248	231.320	9,97%
	Juni	2.581.316	2.349.996	230.840	9,82%
	Juli	2.515.828	2.284.988	230.840	10,10%
	Agustus	2.614.424	2.378.900	235.524	9,90%
	September	2.603.344	2.367.604	235.740	9,96%
	Oktober	2.712.510	2.477.020	235.490	9,51%
	November	2.656.403	2.421.060	235.343	9,72%
	Desember	2.639.798	2.404.384	235.414	9,79%
2015	Januari	2.601.484	2.365.896	235.588	9,96%
	Februari	2.438.596	2.203.216	235.380	10,68%
	Maret	2.658.962	2.423.444	235.518	9,72%
	April	2.539.774	2.304.420	235.354	10,21%
	Mei	2.664.698	2.429.284	235.414	9,69%
	Juni	2.636.446	2.401.027	235.419	9,80%
	Juli	2.430.914	2.195.420	235.494	10,73%
	Agustus	2.542.247	2.306.530	235.717	10,22%
	September	2.597.207	2.361.068	236.139	10,00%
	Oktober	2.686.874	2.451.084	235.790	9,62%
	November	2.584.144	2.348.024	236.120	10,06%
	Desember	2.555.182	2.311.592	243.590	10,54%
	Jumlah	30.936.572	28.108.605		
	Jumlah Penghematan			2.827.967	10,10%

LAMPIRAN 8

G4-EN7 Pengurangan kebutuhan energi pada produk dan jasa

PT Bio Farma (Persero)

Gambar 1

Tabel Pengurangan Kebutuhan Energi per Produk

TAHUN	KONSUMSI ENERGI (kWh)	BATCH PRODUKSI	INTENSITAS (kWh)	PENGURANGAN
2014	17.305.725,37	1314	13.170,26	3,4%
2015	17.016.720,76	1337	12.727,50	

LAMPIRAN 9

ASPEK: AIR

G4-EN8 Total pengambilan air berdasarkan sumber

PT Pupuk indonesia

Gambar 1

Volume Pengambilan Air Berdasarkan Sumber [G4-EN8]
Volume of Water Withdrawal by Sources

Unit Bisnis *Business Unit*	**Sumber Air** *Water Source*	**Volume** (m^3)
PT Pupuk Indonesia (Persero)	Sungai | *River*	23.645.046
PT Petrokimia Gresik	Sungai | *River*	6.255.625
PT Pupuk Kujang	Air hasil daur ulang | *Recycled water*	6.581.520
PT Pupuk Kalimantan Timur	Sungai | *River*	7.665.603
PT Pupuk Iskandar Muda	Sungai | *River*	7.211.181
	Air hasil daur ulang | *Recycled water*	19.030
PT Pupuk Sriwidjaja Palembang	Sungai | *River*	23.645.046

Asia Pulp & Paper

Gambar 2

	Unit	2015	2014	2013
Water withdrawn from source	m^3	234,641,177	243,258,925	247,313,902
Reuse/recycled	%	22	19	31
Consumed water intensity	m^3/t	25	24	20

Gambar 3

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		**11,879,536**	**10,908,686**	**10,886,590**
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		**120,833,209**	**119,329,448**	**114,725,983**
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		**105,666,712**	**100,764,018**	**103,368,821**
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		**232,971,095**	**224,190,199**	**222,361,921**
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1[4]	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2[4]		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	944
	Reused[6]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		**1,190,869**	**1,048,382**	**961,117**
	Landfill		4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		**41,612**	**174,614**	**236,353**
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

[1] Paper production in 2013 & 2014 already included packaging (not recorded separately)
[2] Tissue production in 2014 was revised to include Unieuros Perawang
[3] Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
[4] Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
[5] Started in 2014 we categorised reused, recycled and recovered into one category
[6] Started in 2015 we include incinerated into one category with reused, recycled and recovered

PT Bio Farma (Persero)

Gambar 4

		PEMAKAIAN 2014 (M^3)					
TAHUN	BULAN	SUMUR I	SUMUR II	SUMUR III	SUMUR IV	PDAM I	PDAM II
2014	Januari	525	2899	13	862	8892	2971
	Februari	513	2646	11	773	9801	832
	Maret	555	2531	14	731	9226	1424
	April	528	3058	715	883	7860	1790
	Mei	491	2273	1415	618	6264	1899
	Juni	572	2968	2388	937	13190	2672
	Juli	573	2469	2294	1159	21498	2252
	Agustus	561	2340	2844	2221	9268	2830
	September	648	3793	3660	3579	6378	669
	Oktober	705	3498	2744	3608	5743	0
	November	577	2986	1815	3053	4679	4300
	Desember	668	3605	1819	3043	3859	1768
Total				213246			
2015	Januari	560	2692	921	1831	3930	1117
	Februari	781	2839	772	1919	6151	919
	Maret	2281	3214	776	2768	7848	403
	April	2042	2759	767	2804	7523	415
	Mei	1954	2519	807	2444	4553	693
	Juni	1999	2607	999	1609	7278	675
	Juli	2026	2255	969	1918	6980	703
	Agustus	2296	2783	1689	2146	8890	645
	September	2411	2760	1782	2364	9090	782
	Oktober	2524	2923	1686	2317	11038	921
	November	2414	2852	881	2240	9040	486
	Desember	2598	3048	936	2375	8191	667
Total				195795			

LAMPIRAN 10

G4-EN9 Sumber air yang secara signifikan dipengaruhi oleh pengambilan air

Asia Pulp & Paper

Gambar 1

MILL ENVIRONMENTAL DATA TABLE

			Indah Kiat Perawang			Indah Kiat Serang			Indah Kiat Tangerang		
			2015	2014	2013	2015	2014	2013	2015	2014	2013
Water emissions	pH	mg/l	7.4	7.4	7.4	7.6	7.5	7.7	7.6	7.3	7.8
	TSS		78.0	75.5	75.2	26.7	24.4	18.0	7.7	10.9	8.0
	BOD		75.5	76.2	48.6	45.6	36.6	49.0	12.6	16.9	18.8
	COD		289.0	288.1	193.7	141.4	109.4	119.7	43.8	68.8	42.8
	AOX		7.0	8.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
Air emissions*	NO_2	mg/Nm³	139.5	103.3	115.7	598.9	523.1	230.5	3.3	126.8	81.9
	SO_2		200.1	291.7	149.3	224.5	266.1	169.9	49.8	91.3	15.1
	ClO_2		17.4	17.2	0.0	N/A	N/A	N/A	N/A	N/A	N/A
	HCl		2.9	5.0	0.0	0.0	0.0	0.9	N/A	N/A	N/A
	Cl_2		4.1	4.1	0.1	N/A	N/A	N/A	N/A	N/A	N/A
	Opacity		< 20	< 20	16.7	15.0	12.5	10.3	< 20	< 20	12.5
	TRS		11.9	16.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0
	Total Particulate		111.3	113.2	86.9	28.9	44.6	44.3	7.8	47.7	85.7
Others	Distance to protected area	km	Tesso Nilo National Park (50)			Halimun Mountain National Park (40)			Rawa Danau Tukung Gede Conservation Area (20)		
	Local water source		Siak River			Cisjung River			Cisadane River		

			Lontar Papyrus			Pindo Deli Karawang			Pindo Deli Perawang		
			2015	2014	2013	2015	2014	2013	2015	2014	2013
Water emissions	pH	mg/l	7.1	7.0	6.8	6.6	7.2	7.2	Discharge via Indah Kiat Perawang		
	TSS		26.8	55.2	42.6	16.0	43.2	19.5			
	BOD		41.0	66.6	64.2	17.4	43.0	27.8			
	COD		94.8	251.3	151.3	59.2	99.7	82.3			
	AOX		11.0	0.0	0.0	0.0	0.0	0.2			
Air emissions*	NO_2	mg/Nm³	139.2	206.9	81.5	107.0	162.4	243.3	Discharge via Indah Kiat Perawang		
	SO_2		57.6	71.9	65.1	36.3	45.5	85.4			
	ClO_2		7.2	0.7	0.2	N/A	N/A	N/A			
	HCl		0.1	0.1	0.1	0.3	0.3	0.4			
	Cl_2		3.3	0.6	0.1	0.0	0.3	0.2			
	Opacity		15.1	16.7	13.6	13.9	< 10	12.0			
	TRS		13.3	2.4	1.5	< 10	0.0	0.0			
	Total Particulate		112.4	120.0	70.6	7.8	14.2	10.0			
Others	Distance to protected area	km	Bukit Tigapuluh National Park (30)			Nature Reserve of Tangkuban Perahu Mountain (40)			Tesso Nilo National Park (50)		
	Local water source		Pengabuan River			Citarum River			Siak River		

* Air emissions data follows Indonesia law on reporting against this parameter. Due to the complexity of the interlinked power generation to various pulp and paper making facilities in several mills it is impossible to report the air emission using unit measurement required by GRI.

Gambar 2

			Univenus Perawang			Tjiwi Kimia			Ekamas Fortuna		
			2015	2014	2013	2015	2014	2013	2015	2014	2013
Water emissions	pH	mg/l	Discharge via Indah Kiat Perawang			7.3	7.3	7.5	7.6	7.5	7.8
	TSS					10.2	8.6	22.2	19.0	20.9	17.7
	BOD					15.6	19.2	25.0	19.5	14.4	16.4
	COD					38.5	47.2	61.9	59.1	81.8	49.0
	AOX					0.0	0.0	0.2	N/A	N/A	N/A
Air emissions*	NO_2	mg/Nm³	Discharge via Indah Kiat Perawang			38.7	232.0	53.1	42.8	28.0	79.3
	SO_2					65.1	128.0	103.4	210.5	330.6	428.3
	ClO_2					N/A	N/A	N/A	N/A	N/A	N/A
	HCl					2.8	1.2	1.4	N/A	N/A	N/A
	Cl_2					2.4	0.0	<0.9	N/A	N/A	N/A
	Opacity					< 10	3.0	4.4	1.6	1.6	3.0
	TRS					0.0	0.0	0.0	0.0	0.0	0.0
	Total Particulate					19.9	178.0	18.6	82.2	24.5	87.7
Others	Distance to protected area	km	Tesso Nilo National Park (50)			Bromo Tengger Semeru National Park (80)			Pulau Sempu Nature Reserve (30)		
	Local water source		Siak River			Brantas River			Lesti River		

LAMPIRAN 11

G4-EN10 Persentase dan total volume air yang di daur ulang dan digunakan kembali

PT Toyota Motor Manufacturing Indonesia

Gambar 1

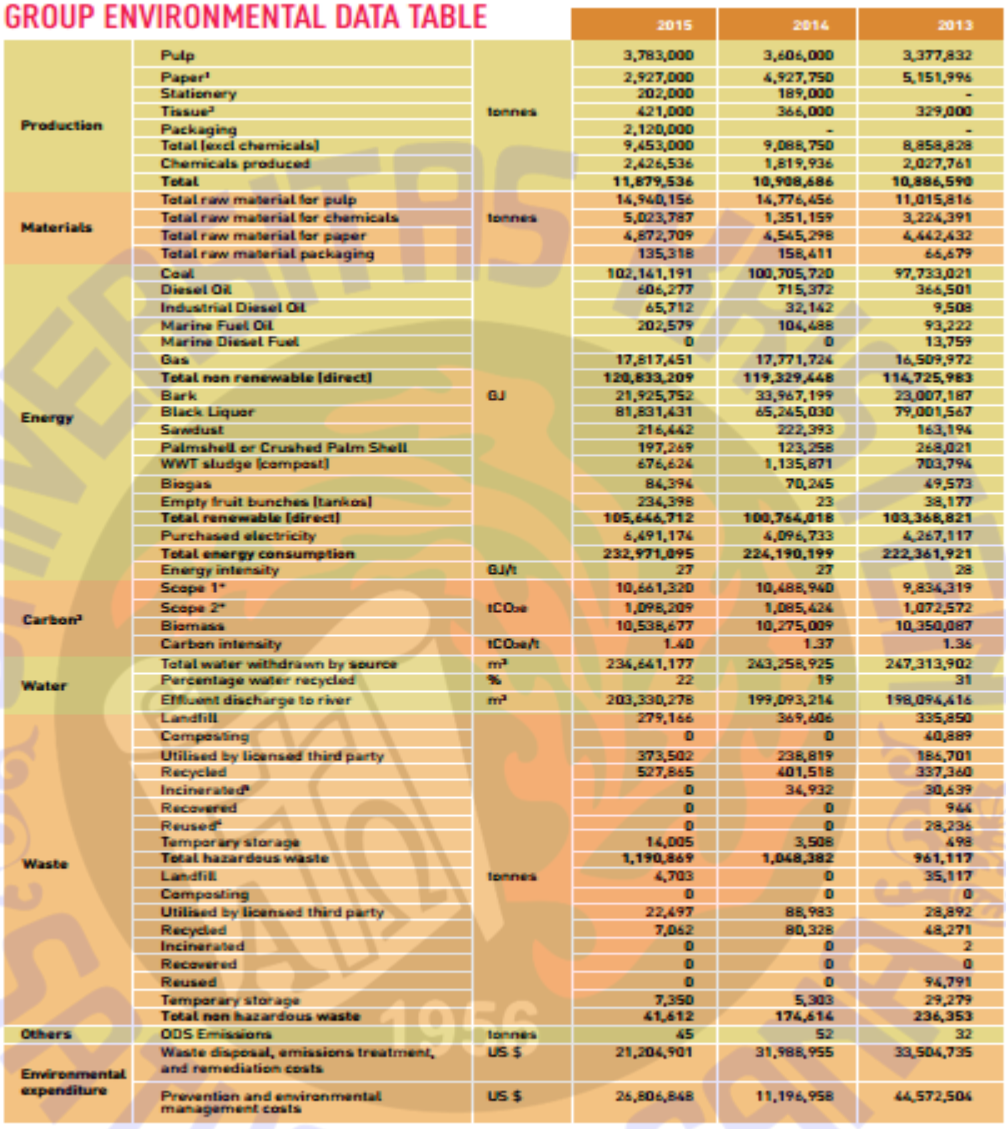
LINGKUNGAN	2013	2014	2015	*ENVIRONMENT*
Green Manufacture				
Reduksi CO_2 (ton/tahun) [G4-EN19]	46.800	51.900	58.500	*CO^2 reduction (ton/year)*
Reduksi limbah (ton/tahun)	534.600	693.900	1.088.600	*Waste reduction (ton/year)*
Reduksi air (m^3/tahun) [G4-EN10]	174.800	197.300	208.900	*Water reduction (m^3/year)*
Reduksi VOC (gr/m^3)	42,4	40,7	40,2	*VOC reduction (gr/m^3)*

Asia Pulp & Paper

Gambar 2

	Unit	2015	2014	2013
Water withdrawn from source	m^3	234,641,177	243,258,925	247,313,902
Reuse/recycled	%	22	19	31
Consumed water intensity	m^3/t	25	24	20

Gambar 3



GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,646,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1[4]	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2[4]		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	236,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	964
	Reused[6]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill	tonnes	4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

[1] Paper production in 2013 & 2014 already included packaging (not recorded separately)
[2] Tissue production in 2014 was revised to include Universo Perawang
[3] Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
[4] Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
[5] Started in 2014 we categorised reused, recycled and recovered into one category
[6] Started in 2015 we include incinerated into one category with reused, recycled and recovered

LAMPIRAN 12

G4-EN14 Jumlah hewan langka atau dilindungi

PT Pupuk Indonesia

Gambar 1

Jenis Pohon Langka di TKHPK (G4-EN14)
Rare Tree Species in TKHPK

Nama Lokal *Local Name*	Nama Ilmiah *Scientific Name*
Asem Londo	*Pithecellobium dulce*
Ki Serut	*Streblus asper Lour.*
Kecapi	*Sandoricum koetjape (Burm.f.) Merr.*
Jamblang	*Syzygium cumini (L.) Skeels*
Kedoya	*Dysoxylum gaudichaudianum (A. Juss.) Miq.*
Jengkol	*Archidendron jiringa (Jack) I.C.Nielsen*
Huru tangkalak	*Litsea glutinosa (Lour.) C.B.Robinson*
Kepuh	*Sterculia foetida L.*
Pongporang	* Onosylum indicum (L.) Vent.*
Suweg	*Amorphophallus campanulatus Bl.*
Acung	*Amorphophallus variabilis Blume*
Melinjo hutan	*Gnetum cuspidatum Blume*
Kasambi	*Schleichera oleosa (Lour.) Oken*
Darowak	*Meneces paniculata L.*
Kayu rapet	*Parameria laevigata (A.L. Juss.) Moldenke*
Tepus	*Etlingera megalocheilos (Griff.) A.D.Poulsen*
Sawo kecik	*Manilkara kauki (L.) Dubard*
Jambu mawar	*Syzygium pycnanthum Merr. & L.M.Perry*
Ki fayu	*Leptanthes rubiginosa (Roxb.) Leenh.*
Jalitri	*Wrightia pubescen R.Br.*
Mengkudu	*Morinda citrifolia L.*
Teureup	*Artocarpus elasticus Reinw. Ex.Bl.*
Sukun	*Artocarpus artilis (Parkinson) Fosberg*
Nangka	*Artocarpus heterophyllus Lam.*
Areuy kibarera	*Tetrastigma lanceolarium Planch.*
Tangkal binteru	*Melastoma umbellata O.Stutt.*
Trengguli	*Cassia fistula L.*
Bintaro	*Cerbera odollam Gaertn.*
Bambu kuning	*Bambusa vulgaris Schard.*
Bambu tali	*Gigantochloa apus (Bl. Ex. Schult.f)Kurz*
Ara jelateh	*Ficus altissima Bl.*
Benying	*Ficus fistulosa Reinw.*
Simpur	*Dillenia excelsa Miq.*
Gebang	*Corypha elata Roxb.*
Pandan pudak	*Pandanus tectorius Soland. Ex. Park*
Gondang	*Ficus variegata Bl.*

LAMPIRAN 13

ASPEK: EMISI

G4-EN15 Emisi gas rumah kaca (GRK) langsung (Cakupan 1)

PT Pupuk Indonesia

Gambar 1

Sertifikasi ISO 14001 Pupuk Indonesia Group Tahun 2015 [G4-15]
Pupuk Indonesia Group's ISO 14001 Certification 2015

Unit Bisnis *Business Unit*	Masa Berlaku *Validity*
PT Petrokimia Gresik	2015 - 2018
PT Pupuk Kujang	2014 - 2017
PT Pupuk Kalimantan Timur	2013 - 2016
PT Pupuk Iskandar Muda	2015 - 2018
PT Pupuk Sriwidjaja Palembang	2015 - 2018

Gambar 2

Hasil Penghitungan Emisi GRK Scope 1 Pupuk Indonesia Group [G4-EN15]
Pupuk Indonesia Group Scope 1 GHG Emission Calculation Results
dalam Ton CO_2eq | *in Ton CO_2eq*

Unit Bisnis *Business Unit*	2015	2014	2013
PT Petrokimia Gresik	1,378,753	1,483,071	1,368,983
PT Pupuk Kujang	1,344,618	1,328,943	1,342,205
PT Pupuk Kalimantan Timur	4,307,836	4,059,657	2,791,224
PT Pupuk Iskandar Muda	111,981	106,927	151,972
PT Pupuk Sriwidjaja Palembang	2,440,405	2,546,051	2,583,579
Total	9,673,050	9,428,786	8,237,964

Asia Pulp & Paper

Gambar 3

APP Consolidated GHG emissions	Unit	2015	2014	2013
Scope 1	tCO_2e	10,661,320	10,371,326	9,834,678
Scope 2	tCO_2e	1,098,209	1,055,166	1,072,572
Intensity	tCO_2e/t	1.40	1.37	1.36

Gambar 4

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		**11,879,536**	**10,908,686**	**10,886,590**
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		**120,833,209**	**119,329,448**	**114,725,983**
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,196
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,396	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		**105,666,712**	**100,764,018**	**103,368,821**
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		**232,971,095**	**224,190,199**	**222,361,921**
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1[4]	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2[4]		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	944
	Reused[6]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		**1,190,869**	**1,048,382**	**961,117**
	Landfill		4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		**41,612**	**174,614**	**236,353**
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

[1] Paper production in 2013 & 2014 already included packaging (not recorded separately)
[2] Tissue production in 2014 was revised to include Universus Perawang
[3] Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
[4] Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
[5] Started in 2014 we categorised reused, recycled and recovered into one category
[6] Started in 2015 we include incinerated into one category with reused, recycled and recovered

PT Bio Farma (Persero)

Gambar 5

Emisi Gas Rumah Kaca Langsung (G4-EN15)

NO.	NAMA SUMBER EMISI	PARAMETER	BEBAN EMISI TAHUN 2014		BEBAN EMISI TAHUN 2015	
			BEBAN EMISI (Ton)	BEBAN EMISI (Ton)	BEBAN EMISI (Ton)	BEBAN EMISI (Ton eq. CO_2)
1.	*Boiler*	CO_2	4,56258	4,56258	4,01063	4,01063
		CH_4	0,0002	0,00499	0,00018	0,00439
		N_2O	0,00031	0,09348	0,00028	0,08217
2.	*Genset*	CO_2	5,31715	5,31715	7,74035	7,74035
		CH_4	0,00023	0,00582	0,00034	0,00847
		N_2O	0,00037	0,10894	0,00053	0,15858
3.	*Incinerator*	CO_2	0,26581	0,26581	0,28967	0,28967
		CH_4	0,00001	0,00029	0,00001	0,00032
		N_2O	0,00002	0,00545	0,00002	0,00593

LAMPIRAN 14

G4-EN16 Emisi GRK energi tidak langsung (Cakupan 2)

PT Pupuk Indonesia

Gambar 1

Hasil Penghitungan Emisi GRK Scope 2 Pupuk Indonesia Group [G4-EN16]
Pupuk Indonesia Group Scope 2 GHG Emission Calculation Results
dalam Ton CO_2eq | *in Ton CO_2eq*

Unit Bisnis *Business Unit*	2015	2014	2013
PT Petrokimia Gresik	50,182	71,919	76,460
PT Pupuk Kujang	8,787	9,896	10,793
Total	58,969	81,815	87,253

Asia Pulp & Paper

Gambar 2

APP Consolidated GHG emissions	Unit	2015	2014	2013
Scope 1	tCO_2e	10,661,320	10,371,326	9,834,678
Scope 2	tCO_2e	1,098,209	1,055,166	1,072,572
Intensity	tCO_2e/t	1.40	1.37	1.36

Gambar 3

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,196
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,666,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1*	tCO2e	10,661,320	10,488,960	9,834,319
	Scope 2*		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	944
	Reused[4]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill		4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

[1] Paper production in 2013 & 2014 already included packaging (not recorded separately)
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[3] Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
[4] Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
[5] Started in 2014 we categorised reused, recycled and recovered into one category
[6] Started in 2015 we include incinerated into one category with reused, recycled and recovered

Gambar 4

Emisi Gas Rumah Kaca Tidak Langsung (G4-EN16)

TAHUN	BULAN	Konsumsi PLN (kWh)		Emisi Gas Rumah Kaca (Ton eq. CO_2)	
		PLN I	PLN II	PLN I	PLN II
2014	Januari	1.295.736	637.328	893,4877162	439,4759
	Februari	1.106.060	590.060	762,6947336	406,88177
	Maret	1.209.804	660.472	834,2324462	455,43507
	April	1.183.212	641.420	815,8956667	442,29758
	Mei	1.186.672	707.876	818,2815443	488,12297
	Juni	1.054.748	648.548	727,3120309	447,21276
	Juli	977.040	632.848	673,7277024	436,38667
	Agustus	1.002.868	650.532	691,5376581	448,58085
	September	1.011.228	667.676	697,3023797	460,40266
	Oktober	1.046.500	676.720	721,62454	466,63904
	November	887.408	772.052	611,9210605	532,37618
	Desember	1.085.072	688.312	748,2222483	474,63242
Total		21.020.192		14.495	
2015	Januari	975.896	67.700	672,9388458	466,83212
	Februari	859.816	618.800	592,894721	426,69973
	Maret	937.636	676.708	646,5562802	466,63077
	April	880.388	661.132	607,0803493	455,89018
	Mei	935.988	669.976	645,4198853	461,98865
	Juni	858.888	625.140	592,2548093	43107154
	Juli	789.844	580.776	544,6448286	400,4799
	Agustus	789.844	580.776	544,6448286	400,4799
	September	884.024	606.344	609,5875894	418,11057
	Oktober	946.604	696.680	652,7402542	480,40266
	November	890.160	600.864	613,8187296	414,33178
	Desember	832.244	474.348	573,8821726	327,09141
Total		17.440.576		12.026	

LAMPIRAN 15

G4-EN18 Intensitas emisi GRK

Asia Pulp & Paper

Gambar 1

APP Consolidated GHG emissions	Unit	2015	2014	2013
Scope 1	tCO_2e	10,661,320	10,371,326	9,834,678
Scope 2	tCO_2e	1,098,209	1,055,166	1,072,572
Intensity	tCO_2e/t	1.40	1.37	1.36

Gambar 2

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
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	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
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Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
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	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,646,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1*	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2*		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[4]		0	34,932	30,639
	Recovered		0	0	944
	Reused[4]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill		4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

*Paper production in 2013 & 2014 already included packaging (not recorded separately)
*Tissue production in 2014 was revised to include Universo Perawang
*Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
*Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
*Started in 2014 we categorised reused, recycled and recovered into one category
*Started in 2015 we include incinerated into one category with reused, recycled and recovered

PT Bio Farma (Persero)

Ganbar 3

Tabel Intensitas Emisi CO_2

DATA	2014	2015
Total emisi CO_2 (ton CO_2 eq.)	14.505,146	12.038,04
Jumlah *batch* produksi	1314	1337
Intensitas emisi	11,04	9,00

Tabel Intensitas Emisi CH_4

DATA	2014	2015
Total emisi CH_4 (ton CO_2 eq.)	0,0111	0,01317
Jumlah *batch* produksi	1314	1337
Intensitas emisi	0,0000084	0,0000098

Gambar 4

Tabel Intensitas Emisi N_2O

DATA	2014	2015
Total emisi N_2O (ton)	0,20787	0,24668
Jumlah *batch* produksi	1314	1337
Intensitas emisi	0,000158	0,000185

LAMPIRAN 16

G4-EN19 Pengurangan emisi GRK

PT Toyota Motor Manufacturing Indonesia

Gambar 1

LINGKUNGAN	2013	2014	2015	*ENVIRONMENT*
Green Manufacture				
Reduksi CO_2 (ton/tahun) [G4-EN19]	46.800	51.900	58.500	*CO^2 reduction (ton/year)*
Reduksi limbah (ton/tahun)	534.600	693.900	1.088.600	*Waste reduction (ton/year)*
Reduksi air (m^3/tahun) [G4-EN10]	174.800	197.300	208.900	*Water reduction (m^3/year)*
Reduksi VOC (gr/m^3)	42,4	40,7	40,2	*VOC reduction (gr/m^3)*

Gambar 2

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,646,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1*	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2*		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m^3	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m^3	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[4]		0	34,932	30,639
	Recovered		0	0	944
	Reused[4]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill		4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

*Paper production in 2013 & 2014 already included packaging (not recorded separately)
*Tissue production in 2014 was revised to include Universus Perawang
*Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
*Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
*Started in 2014 we categorised reused, recycled and recovered into one category
*Started in 2015 we include incinerated into one category with reused, recycled and recovered

Gambar 3

	HASIL ABSOLUT SETARA DENGAN REDUKSI CO_2 (Ton CO_2 eq./Thn)	
KEGIATAN PENGURANGAN PENCEMARAN UDARA	2014	2015
Penanaman pohon	609,34	1461,28
Program penghematan energi listrik dan energi terbarukan:		
Penerapan sistem panel surya untuk pompa air	3,97	3,97
Penggunaan LED, sensor gerak dan sistem panel surya untuk penerangan *basement* parkir di Gedung Publik	51,88	51,88
Pemnfaatan kembali (*recovery*) energi *Exhaust Air* dari ruang produksi	144,49	144,49
Penerapan sistem panel surya untuk penerangan lampu taman	5	17,86
penggantian lampu menggunakan lampu LED (lampu hemat energi)	5,8	8,97
Timer dispenser	9,74	9,74
Media pendingin ramah lingkungan	10,8	10,8
Timer control AHU	1462	1462
Inverter pompa *chiller*	65	65
Inverter dan *night mode* pada 25 *laminar air flow*	60	60

LAMPIRAN 17

G4-EN20 Emisi bahan perusak ozon (BPO)

Asia Pulp & Paper

Gambar 1

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		**11,879,536**	**10,908,686**	**10,886,590**
Materials	Total raw material for pulp	tonnes	14,960,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		**120,833,209**	**119,329,448**	**114,725,983**
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,631	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		**105,666,712**	**100,764,018**	**103,368,821**
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		**232,971,095**	**224,190,199**	**222,361,921**
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1[4]	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2[4]		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,661,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	944
	Reused[6]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		**1,190,869**	**1,048,382**	**961,117**
	Landfill	tonnes	4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		**41,612**	**174,614**	**236,353**
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,206,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

[1] Paper production in 2013 & 2014 already included packaging (not recorded separately)
[2] Tissue production in 2014 was revised to include Univenus Perawang
[3] Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
[4] Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
[5] Started in 2014 we categorised reused, recycled and recovered into one category
[6] Started in 2015 we include incinerated into one category with reused, recycled and recovered

LAMPIRAN 18

G4-EN21 Jumlah emisi: NOx, SOx, POP, VOC, HAP, PM, emisi udara lain

PT Pupuk Indonesia

Gambar 1

Kinerja Pengelolaan Emisi Bukan GRK Tahun 2015 [G4-EN21]
Non-GHG Emissions Management Performance 2015

Unit Bisnis *Business Unit*	Satuan *Unit*	Baku Mutu *Quality Standart*	Hasil Pengukuran *Measurement Result*	Lokasi Pengukuran *Measurement Location*
PT Petrokimia Gresik				
Partikulat | *Particulate*	mg/m³	230	16.26	B 1102 Utilitas I
SO_2	mg/m³	800	1,743	B 1102 Utilitas I
NO_2	mg/m³	1,000	54.43	B 1102 Utilitas I
NO_2	mg/m³	125	125	B 2221 WHB
NO_2	mg/m³	125	3.16	101 B
PT Pupuk Kalimantan Timur				
SO_2	mg/m³	800	<12.90	Package Boiler Kaltim-4
NO_2	mg/m³	1,000	68.70	Package Boiler Kaltim-4
NH_3	mg/m³	300	131.00	Granulator Kaltim-4
Debu | *Dust*	mg/m³	800	37.50	Granulator Kaltim-4
PT Pupuk Iskandar Muda				
NO_2	mg/nm³	700	44.79	Primary Reformer 2
SO_2	mg/nm³	-	41.99	Primary Reformer 2
Opasitas | *Opacity*	%	20	6.13	Primary Reformer 2
NO_2	mg/nm³	1,000	75.89	Packed Boiler 2
SO_2	mg/nm³	800	4.43	Packed Boiler 2
Opasitas | *Opacity*	%	20	7.10	Packed Boiler 2
NO_2	mg/nm³	250	78.79	WHB 2
SO_2	mg/nm³	-	8.92	WHB 2
Opasitas | *Opacity*	%	20	5.41	WHB 2
Partikulat | *Particulate*	mg/nm³	300	3.37	CEM Prilling Tower
NH_3	mg/nm³	250	34.29	CEM Prilling Tower
Opasitas | *Opacity*	%	20	9.21	CEM Prilling Tower
PT Pupuk Sriwidjaja Palembang				
NO_2	mg/m³	125	29.8	WHB PAB
SO_2	mg/m³	-	25.65	WHB PAB
Partikel | *Particles*	mg/m³	-	20.22	WHB PAB
Opasitas | *Opacity*	%	20	7.35	WHB PAB
NO_2	mg/m³	1,000	73.7	Package Boiler PAV
SO_2	mg/m³	800	33.05	Package Boiler PAV
Partikel | *Particles*	mg/m³	230	25.1	Package Boiler PAV
Opasitas | *Opacity*	%	20	9.85	Package Boiler PAV

Gambar 2

Unit Bisnis *Business Unit*	Satuan *Unit*	Baku Mutu *Quality Standart*	Hasil Pengukuran *Measurement Result*	Lokasi Pengukuran *Measurement Location*
NO_2	mg/m³	700	55.85	Primary Reformer PAB
SO_2	mg/m³	-	60.9	Primary Reformer PAB
Partikel | *Particles*	mg/m³	-	29.2	Primary Reformer PAB
Opasitas | *Opacity*	%	20	6.85	Primary Reformer PAB
NH_3	mg/m³	250	51.5	Prilling Tower PAV
Debu Urea | *Debu Urea*	mg/m³	500	12.6	Prilling Tower PAV
Opasitas | *Opacity*	%	20	11.4	Prilling Tower PAV
PT Pupuk Sriwidjaja Palembang				
NO_2	mg/m³	125	107	WHB IB
SO_2	mg/m³	-	0	WHB IB
Partikel | *Particles*	mg/m³	-	0	WHB IB
Opasitas | *Opacity*	%	20	20	WHB IB
NO_2	mg/m³	1,000	125	Package Boiler 1B
SO_2	mg/m³	800	10	Package Boiler 1B
Partikel | *Particles*	mg/m³	230	5	Package Boiler 1B
Opasitas | *Opacity*	%	20	20	Package Boiler 1B
NO_2	mg/m³	700	87	Primary Reformer IB
SO_2	mg/m³	-	0	Primary Reformer IB
Partikel | *Particles*	mg/m³	-	0	Primary Reformer IB
Opasitas | *Opacity*	%	20	20	Primary Reformer IB
NH_3	mg/m³	250	4	Prilling Tower 1B
Debu Urea | *Debu Urea*	mg/m³	300	23	Prilling Tower 1B
Opasitas | *Opacity*	%	20	20	Prilling Tower 1B

Gambar 3

MILL ENVIRONMENTAL DATA TABLE

			Indah Kiat Perawang			Indah Kiat Serang			Indah Kiat Tangerang		
			2015	2014	2013	2015	2014	2013	2015	2014	2013
Water emissions	pH	mg/l	7.4	7.4	7.4	7.6	7.5	7.7	7.6	7.3	7.8
	TSS		78.0	75.5	75.2	26.7	24.4	18.0	7.7	10.9	8.0
	BOD		75.5	76.2	48.6	45.6	36.6	49.0	12.6	16.9	18.8
	COD		289.0	288.1	193.7	141.4	109.4	119.7	43.8	68.8	42.8
	AOX		7.0	8.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
Air emissions[4]	NO_2	mg/Nm³	139.5	103.3	115.7	598.9	523.1	230.5	3.3	126.8	81.9
	SO_2		200.1	291.7	149.3	226.5	266.1	169.9	49.8	91.3	15.1
	ClO_2		17.4	17.2	0.0	N/A	N/A	N/A	N/A	N/A	N/A
	HCl		2.9	5.0	0.0	0.0	0.0	0.9	N/A	N/A	N/A
	Cl_2		4.1	4.1	0.1	N/A	N/A	N/A	N/A	N/A	N/A
	Opacity		< 20	< 20	16.7	15.0	12.5	10.3	< 20	< 20	12.5
	TRS		11.9	16.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0
	Total Particulate		111.3	113.2	86.9	28.9	44.6	44.3	7.8	47.7	85.7
Others	Distance to protected area	km	Tesso Nilo National Park (50)			Halimun Mountain National Park (40)			Rawa Danau Tukung Gede Conservation Area (20)		
	Local water source		Siak River			Ciujung River			Cisadane River		

			Lontar Papyrus			Pindo Deli Karawang			Pindo Deli Perawang		
			2015	2014	2013	2015	2014	2013	2015	2014	2013
Water emissions	pH	mg/l	7.1	7.0	6.8	6.6	7.2	7.2	Discharge via Indah Kiat Perawang		
	TSS		26.8	55.2	42.4	16.0	43.2	19.5			
	BOD		41.0	66.6	64.2	17.4	43.0	27.8			
	COD		94.8	251.3	151.3	59.2	99.7	82.3			
	AOX		11.0	0.0	0.0	0.0	0.0	0.2			
Air emissions[4]	NO_2	mg/Nm³	139.2	206.9	81.5	107.0	142.4	263.3	Discharge via Indah Kiat Perawang		
	SO_2		57.6	71.9	65.1	36.3	45.5	85.4			
	ClO_2		7.2	0.7	0.2	N/A	N/A	N/A			
	HCl		0.1	0.1	0.1	0.3	0.3	0.4			
	Cl_2		3.3	0.6	0.1	0.0	0.3	0.2			
	Opacity		15.1	16.7	13.4	13.9	< 10	12.0			
	TRS		13.3	2.4	1.5	< 10	0.0	0.0			
	Total Particulate		112.4	120.0	70.4	7.8	14.2	10.0			
Others	Distance to protected area	km	Bukit Tigapuluh National Park (30)			Nature Reserve of Tangkuban Perahu Mountain (40)			Tesso Nilo National Park (50)		
	Local water source		Pengabuan River			Citarum River			Siak River		

*Air emissions data follows Indonesia law on reporting against this parameter. Due to the complexity of the interlinked power generation to various pulp and paper making facilities in several mills it is impossible to report the air emission using unit measurement required by GRI.

Gambar 4

			Univenus Perawang			Tjiwi Kimia			Ekamas Fortuna		
			2015	2014	2013	2015	2014	2013	2015	2014	2013
Water emissions	pH	mg/l	Discharge via Indah Kiat Perawang			7.3	7.3	7.5	7.6	7.5	7.8
	TSS					10.2	8.6	22.2	19.0	20.9	17.7
	BOD					15.6	19.2	25.0	19.5	14.4	16.4
	COD					38.5	47.2	61.9	59.1	81.8	49.0
	AOX					0.0	0.0	0.2	N/A	N/A	N/A
Air emissions[4]	NO_2	mg/Nm³	Discharge via Indah Kiat Perawang			38.7	232.0	53.1	42.8	28.0	79.3
	SO_2					65.1	128.0	103.4	210.5	330.6	428.3
	ClO_2					N/A	N/A	N/A	N/A	N/A	N/A
	HCl					2.8	1.2	1.4	N/A	N/A	N/A
	Cl_2					2.4	0.0	<0.9	N/A	N/A	N/A
	Opacity					< 10	3.0	4.4	1.6	1.6	3.0
	TRS					0.0	0.0	0.0	0.0	0.0	0.0
	Total Particulate					19.9	178.0	18.6	82.2	24.5	87.7
Others	Distance to protected area	km	Tesso Nilo National Park (50)			Bromo Tengger Semeru National Park (80)			Pulau Sempu Nature Reserve (30)		
	Local water source		Siak River			Brantas River			Lesti River		

PT Bio Farma (Persero)

Gambar 5

Total Emisi Dari Sumber Emisi Produksi (Ton/Tahun) – Genset

PARAMETER	2014	2015
Partikel	93,10	67
SO_2 (benar, SO_2 merupakan bagian dari Sox, sesuai dengan pengukuran yang dilakukan, sesuai regulasi)	14,46	340,63
NO_2 (benar, NO_2 merupakan bagian dari Nox, sesuai dengan pengukuran yang dilakukan, sesuai regulasi)	185,87	530,38
CO (Karbonmonoksida, pengukuran dilakukan sesuai dengan regulasi)	575,79	293,12

Total Emisi Dari Sumber Emisi Produksi (Ton/Tahun) – Boiler

PARAMETER	2014	2015
Partikel	44,22	34,18
SO_2	0,34	3,44
NO_2	108,19	42,87

Total Emisi Dari Sumber Emisi Proses Pendukung – Incinerator

PARAMETER	2014	2015
Partikel	186,84	96,79
SO_2	372,26	192,81
NO_2	83,45	44,47
CO	359,03	337,67

LAMPIRAN 19

ASPEK: EFLUEN DAN LIMBAH

G4-EN22 Total air yang dibuang berdasarkan kualitas dan tujuan

Gambar 1

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,646,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1*	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2*		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	236,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[4]		0	34,932	30,639
	Recovered		0	0	944
	Reused[4]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill	tonnes	4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

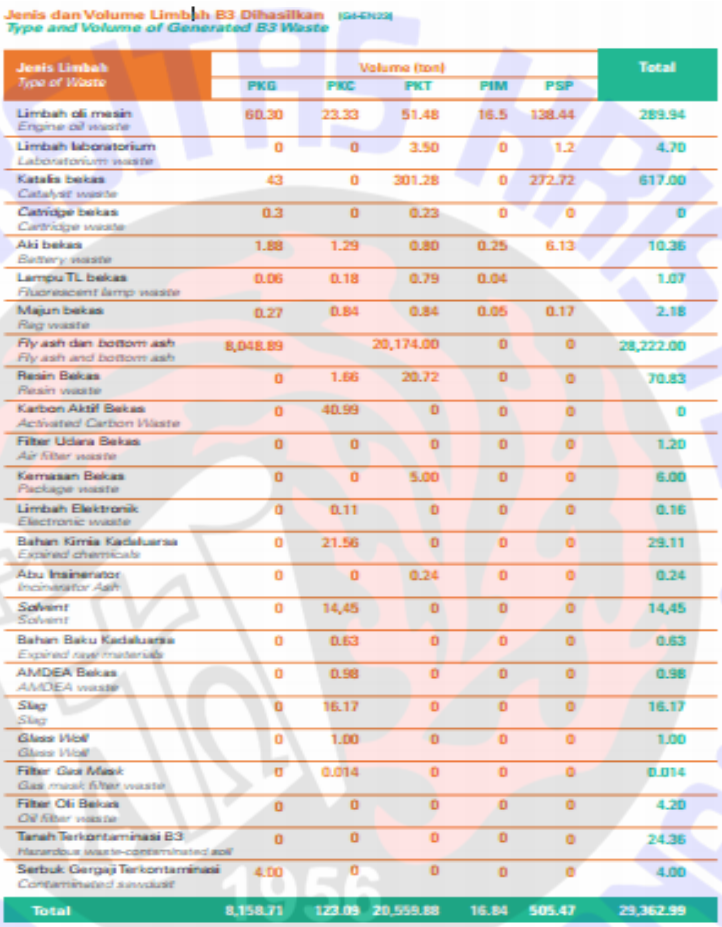
*Paper production in 2013 & 2014 already included packaging (not recorded separately)
*Tissue production in 2014 was revised to include Universus Perawang
*Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
*Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
*Started in 2014 we categorised reused, recycled and recovered into one category
*Started in 2015 we include incinerated into one category with reused, recycled and recovered

LAMPIRAN 20

G4-EN23 Bobot total limbah berdasarkan jenis dan metode pembuangan limbah

PT Pupuk Indonesia

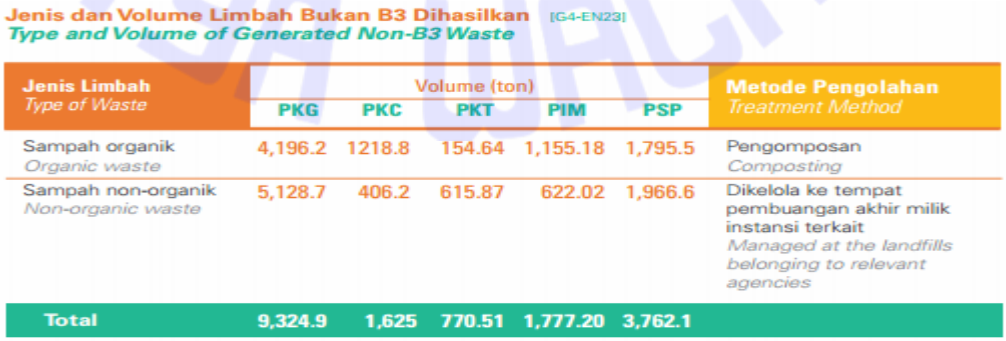
Gambar 1



Jenis dan Volume Limbah B3 Dihasilkan [G4-EN23]
Type and Volume of Generated B3 Waste

Jenis Limbah *Type of Waste*	Volume (ton)					Total
	PKG	PKC	PKT	PIM	PSP	
Limbah oli mesin *Engine oil waste*	60.30	23.33	51.48	16.5	138.44	289.94
Limbah laboratorium *Laboratorium waste*	0	0	3.50	0	1.2	4.70
Katalis bekas *Catalyst waste*	43	0	301.28	0	272.72	617.00
Catridge bekas *Cartridge waste*	0.3	0	0.23	0	0	0
Aki bekas *Battery waste*	1.88	1.29	0.80	0.25	6.13	10.36
Lampu TL bekas *Fluorescent lamp waste*	0.06	0.18	0.79	0.04		1.07
Majun bekas *Rag waste*	0.27	0.84	0.84	0.05	0.17	2.18
Fly ash dan bottom ash *Fly ash and bottom ash*	8,048.89		20,174.00	0	0	28,222.00
Resin Bekas *Resin waste*	0	1.66	20.72	0	0	70.83
Karbon Aktif Bekas *Activated Carbon Waste*	0	40.99	0	0	0	0
Filter Udara Bekas *Air filter waste*	0	0	0	0	0	1.20
Kemasan Bekas *Package waste*	0	0	5.00	0	0	6.00
Limbah Elektronik *Electronic waste*	0	0.11	0	0	0	0.16
Bahan Kimia Kadaluarsa *Expired chemicals*	0	21.56	0	0	0	29.11
Abu Insinerator *Incinerator Ash*	0	0	0.24	0	0	0.24
Solvent *Solvent*	0	14,45	0	0	0	14,45
Bahan Baku Kadaluarsa *Expired raw materials*	0	0.63	0	0	0	0.63
AMDEA Bekas *AMDEA waste*	0	0.98	0	0	0	0.98
Slag *Slag*	0	16.17	0	0	0	16.17
Glass Wall *Glass Wall*	0	1.00	0	0	0	1.00
Filter Gas Masi *Gas mask filter waste*	0	0.014	0	0	0	0.014
Filter Oli Bekas *Oil filter waste*	0	0	0	0	0	4.20
Tanah Terkontaminasi B3 *Hazardous waste-contaminated soil*	0	0	0	0	0	24.36
Serbuk Gergaji Terkontaminasi *Contaminated sawdust*	4.00	0	0	0	0	4.00
Total	8,158.71	123.09	20,559.88	16.84	505.47	29,362.99

Gambar 2



Jenis dan Volume Limbah Bukan B3 Dihasilkan [G4-EN23]
Type and Volume of Generated Non-B3 Waste

Jenis Limbah *Type of Waste*	Volume (ton)					Metode Pengolahan *Treatment Method*
	PKG	PKC	PKT	PIM	PSP	
Sampah organik *Organic waste*	4,196.2	1218.8	154.64	1,155.18	1,795.5	Pengomposan *Composting*
Sampah non-organik *Non-organic waste*	5,128.7	406.2	615.87	622.02	1,966.6	Dikelola ke tempat pembuangan akhir milik instansi terkait *Managed at the landfills belonging to relevant agencies*
Total	9,324.9	1,625	770.51	1,777.20	3,762.1	

Asia Pulp & Paper

Gambar 3

	Unit	2015	2014	2013
Total waste	tonnes	1,225,526	1,222,995	1,197,470
Landfilled waste	tonnes	279,168	369,606	370,966
Waste intensity	t/t	0.13	0.13	0.14

Gambar 4

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,940,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,565,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,726	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,196
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,666,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1*	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2*		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,641,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	944
	Reused[4]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill		4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

*Paper production in 2013 & 2014 already included packaging (not recorded separately)
*Tissue production in 2014 was revised to include Universe Perawang
*Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
*Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
*Started in 2014 we categorised reused, recycled and recovered into one category
*Started in 2015 we include incinerated into one category with reused, recycled and recovered

LAMPIRAN 21

G4-EN26 Badan air dan habitat yang terkena dampak pembuangan air

Gambar 1

MILL ENVIRONMENTAL DATA TABLE

			Indah Kiat Perawang			Indah Kiat Serang			Indah Kiat Tangerang		
			2015	2014	2013	2015	2014	2013	2015	2014	2013
Water emissions	pH	mg/l	7.4	7.4	7.4	7.6	7.5	7.7	7.6	7.3	7.8
	TSS		78.0	75.5	75.2	26.7	24.4	18.0	7.7	10.9	8.0
	BOD		75.5	76.2	48.6	45.6	36.6	49.0	12.6	16.9	18.8
	COD		289.0	288.1	193.7	141.4	109.4	119.7	43.8	68.8	42.8
	AOX		7.0	8.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
Air emissions*	NO_x	mg/Nm³	139.5	103.3	115.7	598.9	523.1	230.5	3.3	126.8	81.9
	SO_2		200.1	291.7	149.3	224.5	266.1	169.9	49.8	91.3	15.1
	ClO_2		17.4	17.2	0.0	N/A	N/A	N/A	N/A	N/A	N/A
	HCl		2.9	5.0	0.0	0.0	0.0	0.9	N/A	N/A	N/A
	Cl_2		4.1	4.1	0.1	N/A	N/A	N/A	N/A	N/A	N/A
	Opacity		< 20	< 20	16.7	15.0	12.5	10.3	< 20	< 20	12.5
	TRS		11.9	14.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0
	Total Particulate		111.3	113.2	86.9	28.9	44.6	44.3	7.8	47.7	85.7
Others	Distance to protected area	km	Tesso Nilo National Park (50)			Halimun Mountain National Park (40)			Rawa Danau Tukung Gede Conservation Area (20)		
	Local water source		Siak River			Ciujung River			Cisadane River		

			Lontar Papyrus			Pindo Deli Karawang			Pindo Deli Perawang		
			2015	2014	2013	2015	2014	2013	2015	2014	2013
Water emissions	pH	mg/l	7.1	7.0	6.8	6.6	7.2	7.2	Discharge via Indah Kiat Perawang		
	TSS		26.8	55.2	42.4	16.0	43.2	19.5			
	BOD		41.0	66.6	64.2	17.4	43.0	27.8			
	COD		94.8	251.3	151.3	59.2	99.7	82.3			
	AOX		11.0	0.0	0.0	0.0	0.0	0.2			
Air emissions*	NO_x	mg/Nm³	139.2	206.9	81.5	107.0	142.6	263.3	Discharge via Indah Kiat Perawang		
	SO_2		57.6	71.9	65.1	36.3	45.5	85.4			
	ClO_2		7.2	0.7	0.2	N/A	N/A	N/A			
	HCl		0.1	0.1	0.1	0.3	0.3	0.4			
	Cl_2		3.3	0.6	0.1	0.0	0.3	0.2			
	Opacity		15.1	16.7	13.6	13.9	< 10	12.0			
	TRS		13.3	2.4	1.5	< 10	0.0	0.0			
	Total Particulate		112.6	120.0	70.4	7.8	14.2	10.0			
Others	Distance to protected area	km	Bukit Tigapuluh National Park (30)			Nature Reserve of Tangkuban Perahu Mountain (40)			Tesso Nilo National Park (50)		
	Local water source		Pengabuan River			Citarum River			Siak River		

* Air emissions data follows Indonesia law on reporting against this parameter. Due to the complexity of the interlinked power generation to various pulp and paper making facilities in several mills it is impossible to report the air emission using unit measurement required by GRI.

Gambar 2

			Univenus Perawang			Tjiwi Kimia			Ekamas Fortuna		
			2015	2014	2013	2015	2014	2013	2015	2014	2013
Water emissions	pH	mg/l	Discharge via Indah Kiat Perawang			7.3	7.3	7.5	7.6	7.5	7.8
	TSS					10.2	8.6	22.2	19.0	20.9	17.7
	BOD					15.6	19.2	25.0	19.5	14.4	16.4
	COD					38.5	47.2	61.9	59.1	81.8	49.0
	AOX					0.0	0.0	0.2	N/A	N/A	N/A
Air emissions*	NO_2	mg/Nm³	Discharge via Indah Kiat Perawang			38.7	232.0	53.1	42.8	28.0	79.3
	SO_2					65.1	128.0	103.4	210.5	330.6	428.3
	ClO_2					N/A	N/A	N/A	N/A	N/A	N/A
	HCl					2.8	1.2	1.4	N/A	N/A	N/A
	Cl_2					2.4	0.0	<0.9	N/A	N/A	N/A
	Opacity					< 10	3.0	4.4	1.6	1.6	3.0
	TRS					0.0	0.0	0.0	0.0	0.0	0.0
	Total Particulate					19.9	178.0	18.6	82.2	24.5	87.7
Others	Distance to protected area	km	Tesso Nilo National Park (50)			Bromo Tengger Semeru National Park (80)			Pulau Sempu Nature Reserve (30)		
	Local water source		Siak River			Brantas River			Lesti River		

LAMPIRAN 22

ASPEK: PRODUK DAN JASA

G4-EN27 Tingkat mitigasi dampak terhadap dampak lingkungan produk dan jasa

PT Bio Farma (Persero)

Gambar 1

Produksi Vaksin Pentabio

PENTABIO	5 DOSIS	1 DOSIS
Jumlah Produksi (vial)	340.000	2.880.000
Jumlah Dosis	1.700.000	2.880.000
Total Dosis 2015	**4.580.000**	
Berat Kemasan per Dus (gram)	19	17
Sampah Kemasan	646.000	4.896.000
Total Sampah (gram)	**5.542.000**	

Produksi Vaksin DTP, Vaksin Hepatitis B dan Vaksin HIB dengan Dosis yang sama (4.580.000 dosis)

PRODUKSI VAKSIN	DTP	Hep B	Hib
Jumlah Dus	458.000	458.000	458.000
Berat Kemasan (gram)	20	17	17
Sampah Kemasan	916.000	7.786.000	7.786.000
Total Sampah (gram)		**16.488.000**	

LAMPIRAN 23

ASPEK: LAIN-LAIN

G4-EN31 Total pengeluaran dan investasi perlindungan lingkungan

Asia Pulp & Paper

Gambar 1

GROUP ENVIRONMENTAL DATA TABLE

			2015	2014	2013
Production	Pulp	tonnes	3,783,000	3,606,000	3,377,832
	Paper[1]		2,927,000	4,927,750	5,151,996
	Stationery		202,000	189,000	-
	Tissue[2]		421,000	366,000	329,000
	Packaging		2,120,000	-	-
	Total (excl chemicals)		9,453,000	9,088,750	8,858,828
	Chemicals produced		2,426,536	1,819,936	2,027,761
	Total		11,879,536	10,908,686	10,886,590
Materials	Total raw material for pulp	tonnes	14,960,156	14,776,456	11,015,816
	Total raw material for chemicals		5,023,787	1,351,159	3,224,391
	Total raw material for paper		4,872,709	4,545,298	4,442,432
	Total raw material packaging		135,318	158,411	66,679
Energy	Coal	GJ	102,141,191	100,705,720	97,733,021
	Diesel Oil		606,277	715,372	366,501
	Industrial Diesel Oil		65,712	32,142	9,508
	Marine Fuel Oil		202,579	104,488	93,222
	Marine Diesel Fuel		0	0	13,759
	Gas		17,817,451	17,771,724	16,509,972
	Total non renewable (direct)		120,833,209	119,329,448	114,725,983
	Bark		21,925,752	33,967,199	23,007,187
	Black Liquor		81,831,431	65,245,030	79,001,567
	Sawdust		216,442	222,393	163,194
	Palmshell or Crushed Palm Shell		197,269	123,258	268,021
	WWT sludge (compost)		676,624	1,135,871	703,794
	Biogas		84,394	70,245	49,573
	Empty fruit bunches (tankos)		234,398	23	38,177
	Total renewable (direct)		105,666,712	100,764,018	103,368,821
	Purchased electricity		6,491,174	4,096,733	4,267,117
	Total energy consumption		232,971,095	224,190,199	222,361,921
	Energy intensity	GJ/t	27	27	28
Carbon[3]	Scope 1[4]	tCO2e	10,661,320	10,488,940	9,834,319
	Scope 2[4]		1,098,209	1,085,424	1,072,572
	Biomass		10,538,677	10,275,009	10,350,087
	Carbon intensity	tCO2e/t	1.40	1.37	1.36
Water	Total water withdrawn by source	m³	234,661,177	243,258,925	247,313,902
	Percentage water recycled	%	22	19	31
	Effluent discharge to river	m³	203,330,278	199,093,214	198,094,416
Waste	Landfill	tonnes	279,166	369,606	335,850
	Composting		0	0	40,889
	Utilised by licensed third party		373,502	238,819	186,701
	Recycled		527,865	401,518	337,360
	Incinerated[5]		0	34,932	30,639
	Recovered		0	0	944
	Reused[6]		0	0	28,236
	Temporary storage		14,005	3,508	498
	Total hazardous waste		1,190,869	1,048,382	961,117
	Landfill	tonnes	4,703	0	35,117
	Composting		0	0	0
	Utilised by licensed third party		22,497	88,983	28,892
	Recycled		7,062	80,328	48,271
	Incinerated		0	0	2
	Recovered		0	0	0
	Reused		0	0	94,791
	Temporary storage		7,350	5,303	29,279
	Total non hazardous waste		41,612	174,614	236,353
Others	ODS Emissions	tonnes	45	52	32
Environmental expenditure	Waste disposal, emissions treatment, and remediation costs	US $	21,204,901	31,988,955	33,504,735
	Prevention and environmental management costs	US $	26,806,848	11,196,958	44,572,504

[1] Paper production in 2013 & 2014 already included packaging (not recorded separately)
[2] Tissue production in 2014 was revised to include Univenus Perawang
[3] Data calculation based on Intergovernmental Panel on Climate Change (IPCC) and World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) - Greenhouse Gas (GHG) Protocol methodology
[4] Data 2013 & 2014 revised following updated IPCC 2013 standard and emission factor for electricity from national grid
[5] Started in 2014 we categorised reused, recycled and recovered into one category
[6] Started in 2015 we include incinerated into one category with reused, recycled and recovered