



Carbon Reduction Commitment Energy Efficiency Scheme

How our technology can help you comply?

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- ❑ Who is aware of the CRC?
- ❑ Do you understand your costs and reporting obligations?
- ❑ Are you ready to reduce your energy consumption by 5% every year?
- ❑ Have you created a business process to achieve compliance by 1 April 2010?
- ❑ Will 90 working days be enough time for you to implement a new business process?
- ❑ Who is going to get fined £50,000 and face three years imprisonment?



Part One

- ❑ Helping you understand the CRC legislation
- ❑ Are you included?
- ❑ Your key milestone dates

Part Two

- ❑ Show how our solutions help you comply
- ❑ How we can automate your business process
- ❑ Tools for historical analysis, forecasting and decision support

- ❑ UK “Cap & Trade” scheme to reduce energy use year by year. Designed to create a shift in awareness, behaviour and infrastructure
- ❑ Starts 1 April 2010, allowances must be purchased for every tonne of CO₂ emitted, initially at a fixed price of £12 / tonne CO₂
- ❑ From 2013 allowances will be capped and publically auctioned, price expected to rise!
- ❑ Government will publish a performance league table showing the comparative performance of the top 5000 participants









Why is recognition of CRC so low?






- Environment Agency has sent a letter to all UK meter addresses
- Gartner asked 626 worldwide enterprises with 1,000-10,000 employees “Is carbon pricing affecting your planning for next 24 months?”






Results:

	7.9%	UK
	10.5%	France
	21.1%	India
	20.0%	China

Mandatory legislation

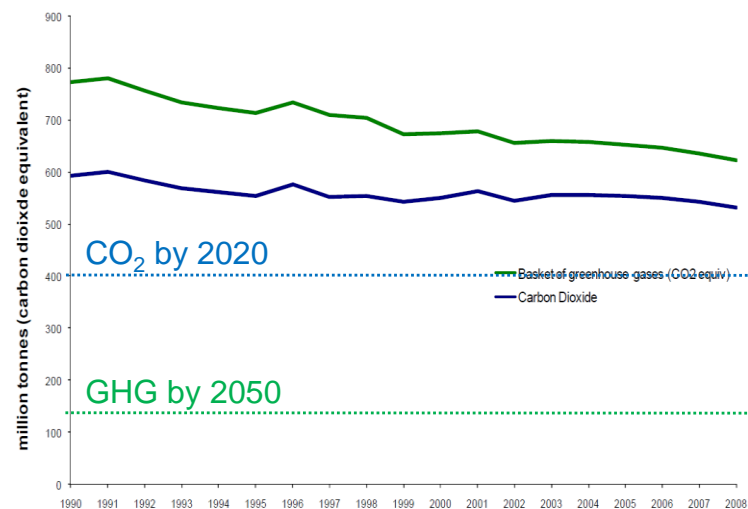
-  1997 Kyoto Protocol
-  2009 Copenhagen Protocol
-  Stern Review
-  Energy Act 2008
-  Climate Change Act 2008

Voluntary schemes

-  BS EN 16001
-  The Green Grid PUE
-  EU Code of Conduct on Data Centre Energy Efficiency



- ❑ Aims to transition UK to a low carbon economy
- ❑ Legally binding target : 80% reduction in greenhouse gas emissions by 2050
- ❑ 34% reduction in CO₂ by 2020
- ❑ Mandatory reporting for all **175,000** half hourly meter owners (20,000 organisations)
- ❑ Top **5000** organisations must join the emission trading scheme



❑ A league table will rank the 5000 organisation against three metrics

- **Absolute Emissions** : % reduction compared with previous year
- **Growth** : percentage reduction per unit of turnover
- **Early Initiatives** : Actions taken before April 2011
 - Percentage of emissions covered by voluntary aM&T system
 - Percentage of emissions covered by Carbon Trust Standard



❑ Allowances are purchased in April for the year ahead

❑ In October all revenue will be returned, bonus paid to top 2500 participants but penalties for bottom 2500

❑ The league table will be publically available – no more “green washing”

❑ Potential to make a profit by being at the top of the league table



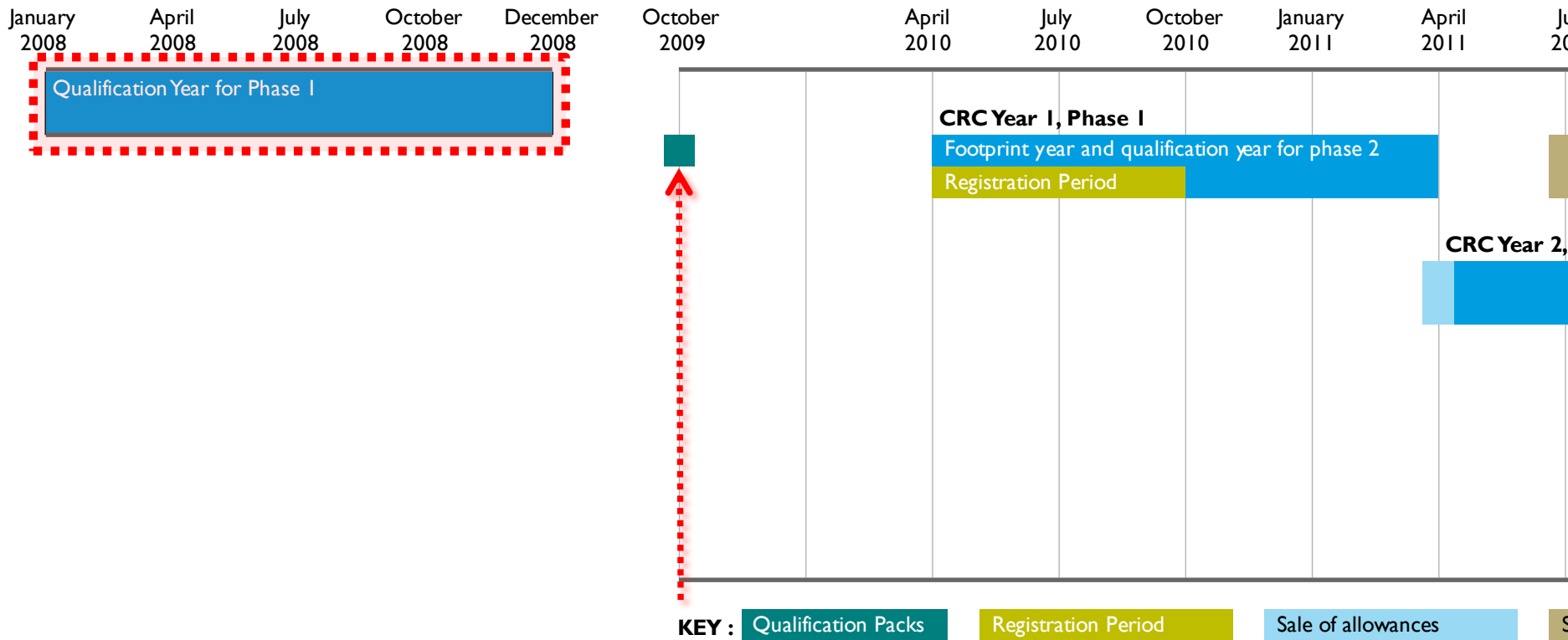
Who does the legislation apply to?

- ❑ Any UK organisation with more than one of the 175,000 half hourly electricity meters must report energy consumption (20,000 organisations)
- ❑ Any organisation spending more than £500,000 on electricity in 2008 must join the allowance trading scheme (5,000 organisations)
- ❑ All state-funded schools & universities – new!
- ❑ All central government departments
- ❑ Qualification is based on electricity but if you qualify you must collect and report on all non-transport fossil fuels (mainly gas, oil)
- ❑ CRC targets highest parent organisation who must report on energy usage of all subsidiaries
- ❑ What if I already buy 100% renewable electricity? It does not matter.

- ❑ Failure to register is a fine of £5000 + £500 per day
- ❑ Failure to disclose information is £500 per meter
- ❑ Failure to submit annual report is £5000 + £500 per day. Bottom ranking on Performance League Table
- ❑ Incorrect reporting £40 / tonne CO₂
- ❑ Falsification or reckless statements results in imprisonment up to three years, fine up to £50,000
- ❑ **Reputational risk** to your brand by being at the bottom of the league table!

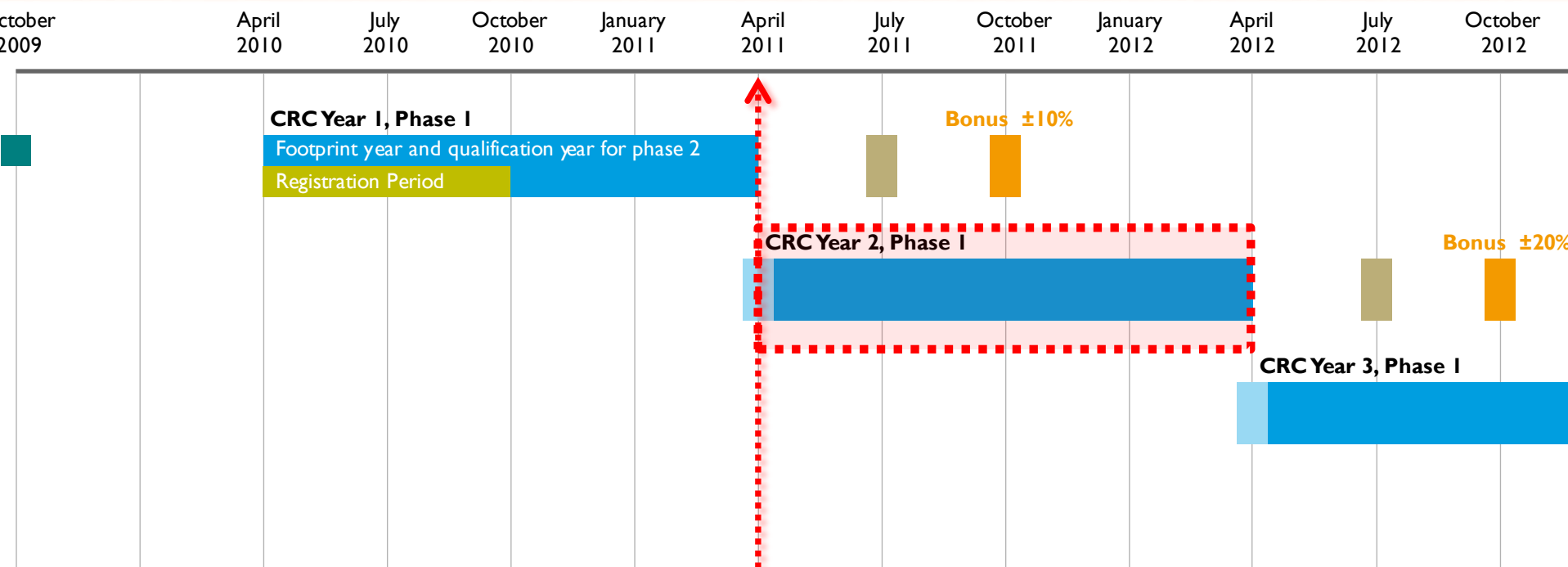


Timeline for compliance



- Participants collate meter numbers and electricity used in 2008. October 2009 – Environment Agency sent registration packs to billing address.

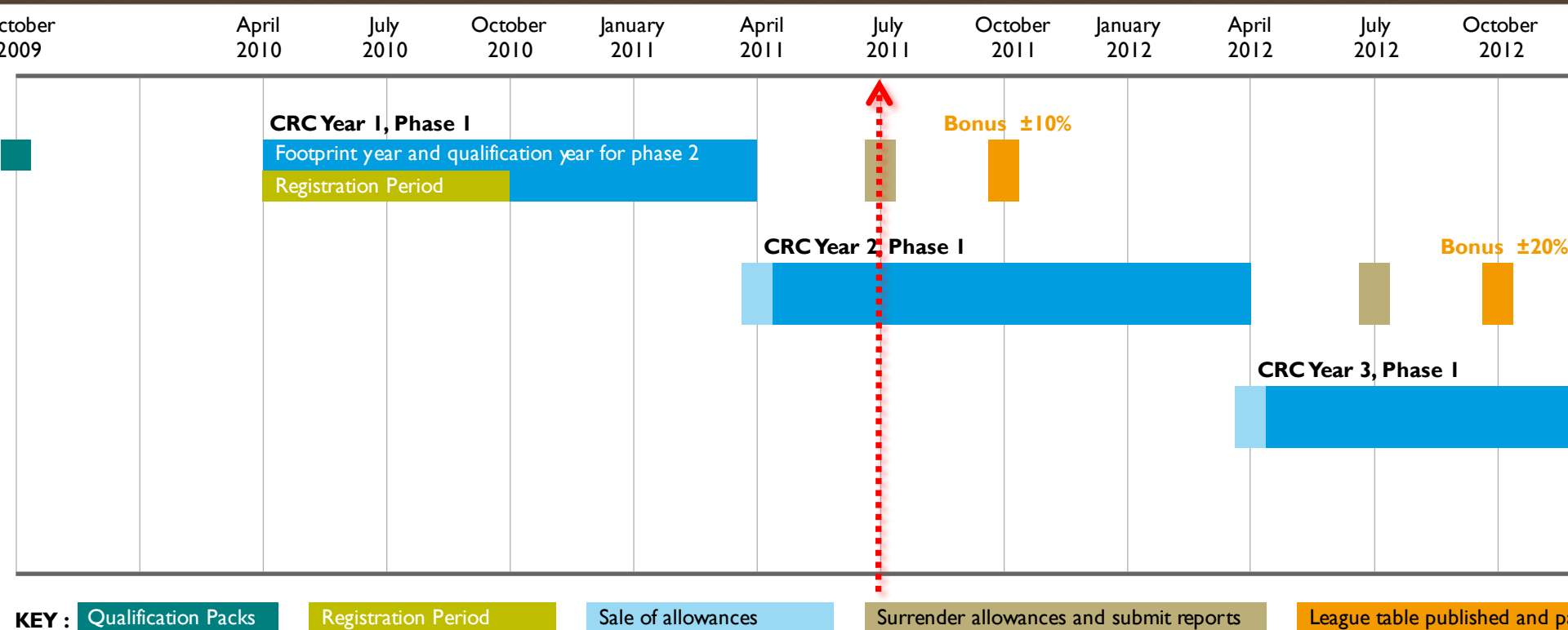
Timeline for compliance



KEY : Qualification Packs Registration Period Sale of allowances Surrender allowances and submit reports League table published and p

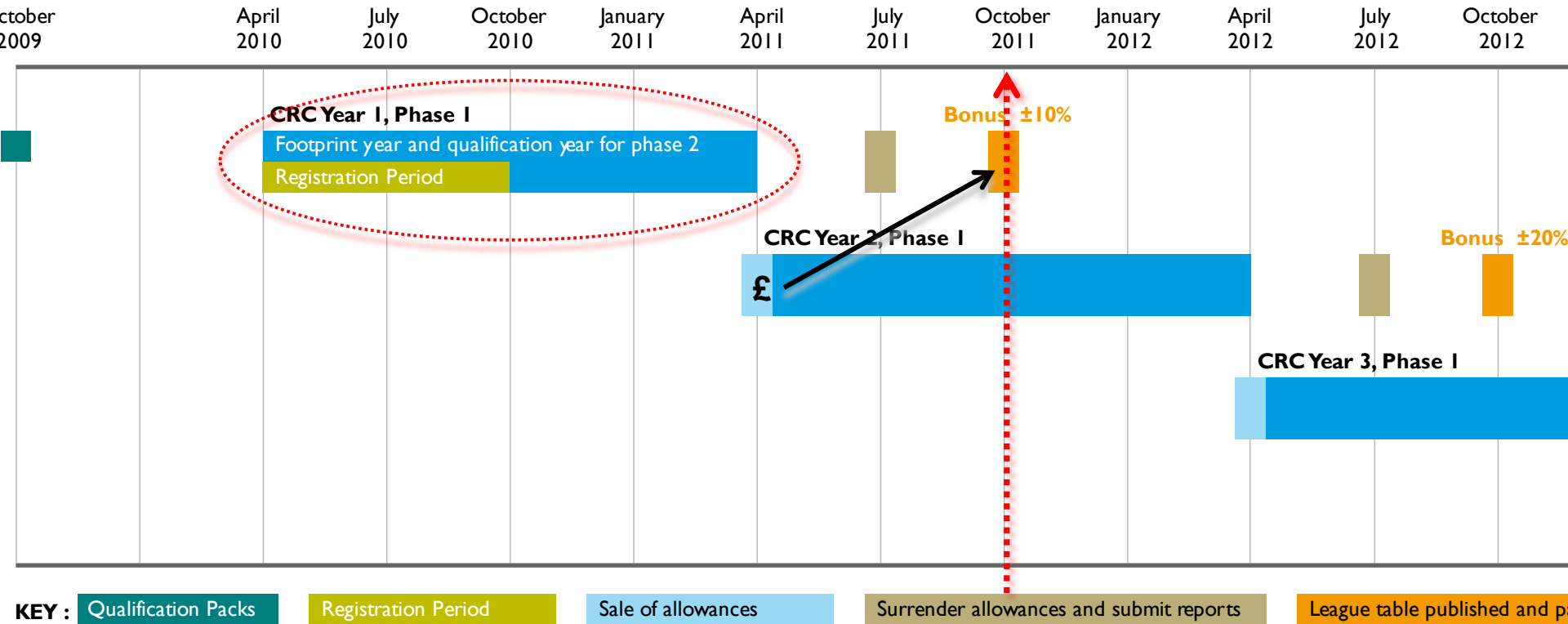
 2011 April - allowances are purchased in advance for 2011/12 at a fixed price of £12/tCO₂

Timeline for compliance



 2011 July - Submit Footprint and Annual Report detailing emissions during 2010/11. Allowances are surrendered.

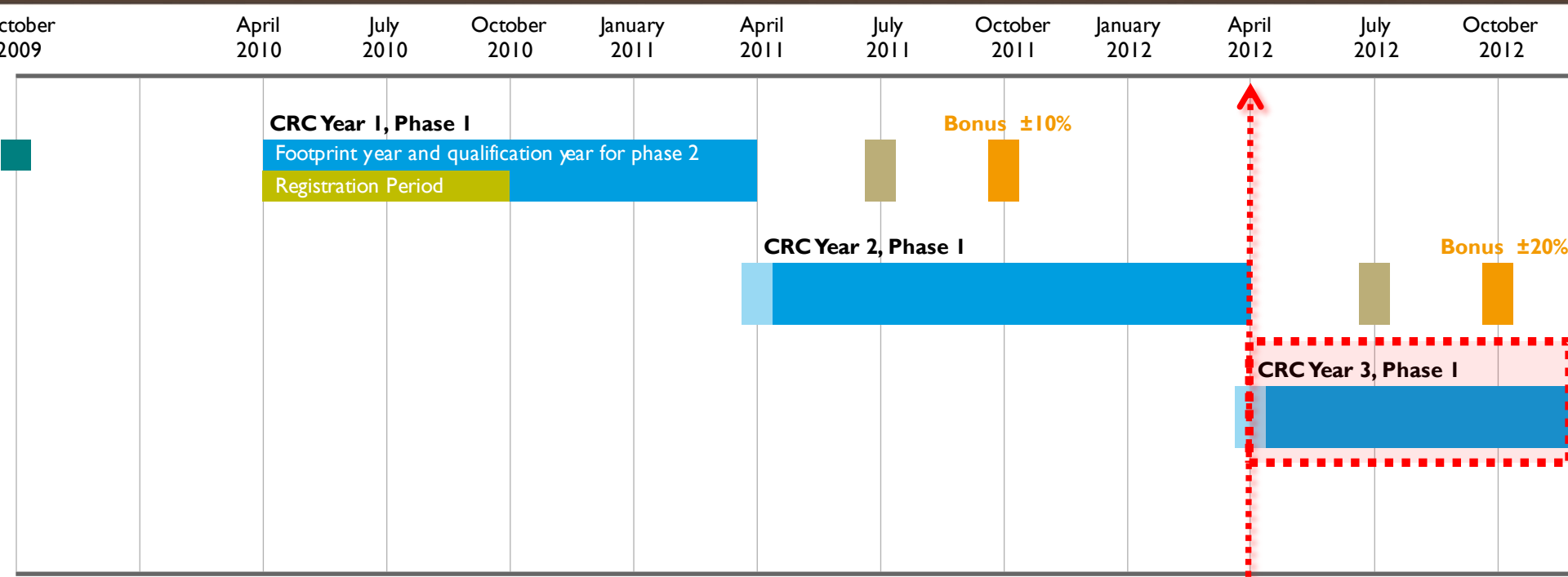
Timeline for compliance




 2011 October – First league table is published based on 2010/11 and the first bonus payments are made based on position in the league table



Timeline for compliance

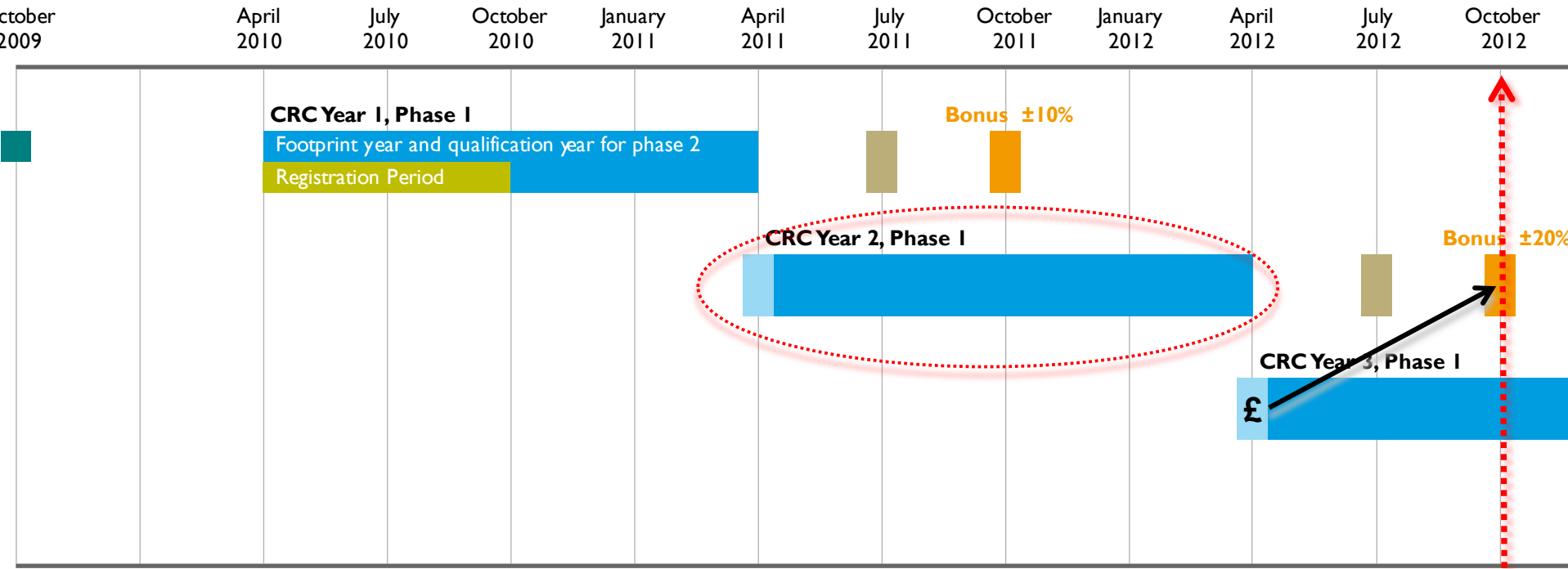


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 2012 April – Buy allowances in advance for 2012/13 at a fixed price of £12/tCO₂



Timeline for compliance

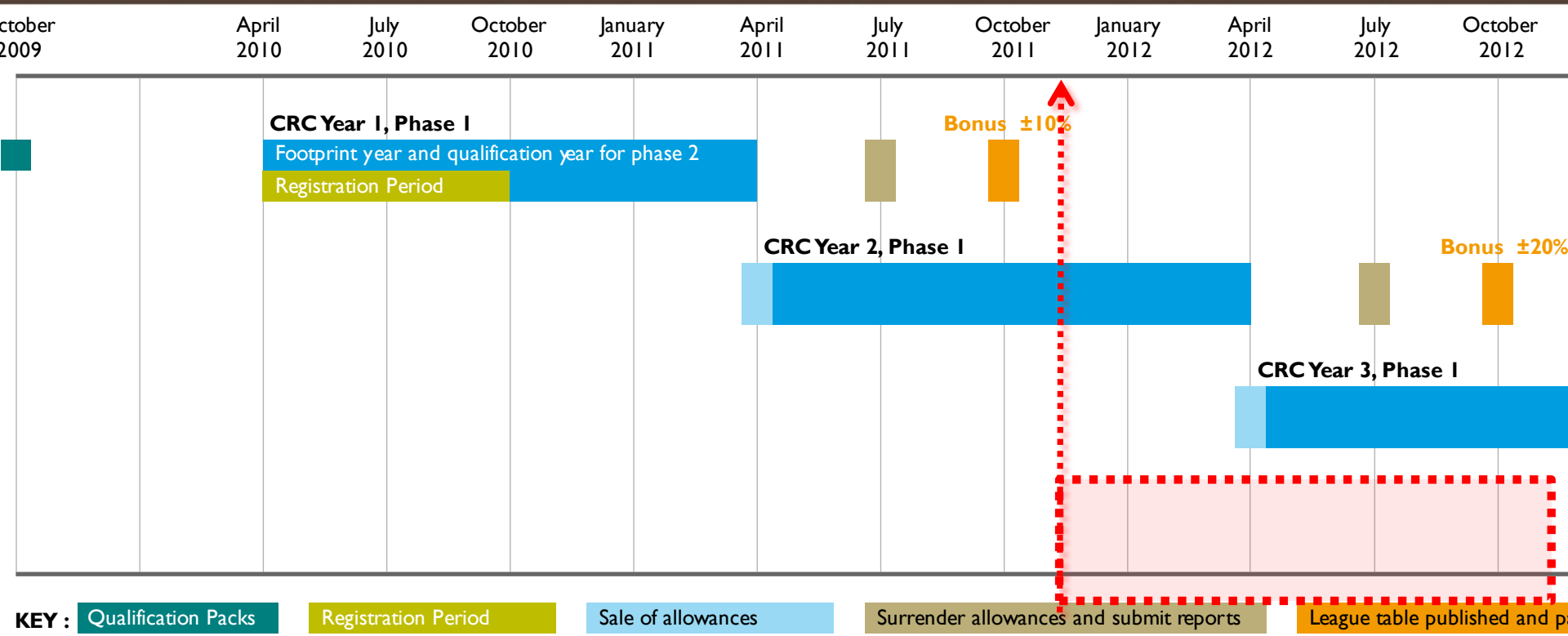


KEY : Qualification Packs Registration Period Sale of allowances Surrender allowances and submit reports League table published and performance bonus

 2012 October – Second repayment based on 2011/12 performance returning cash paid in April



Timeline for compliance



 2013 April - Buy allowances in advance for 2013/14. Capping and auctioning (sealed bid uniform price) of carbon allowances begins.

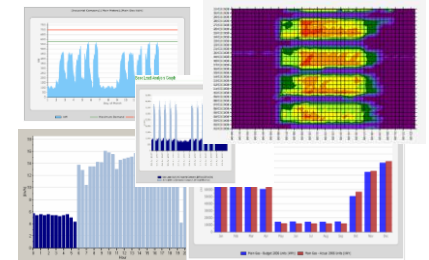
- ❑ Scheme starts on 1 April 2010...just 90 working days
- ❑ Work with a specialist to build a compliance system
- ❑ Automate the data collection and reporting
- ❑ Analyse current consumption and set energy budgets
- ❑ Forecast future consumption so you can buy the right number of allowances
- ❑ Prepare your business for an era of annual 5% energy reductions



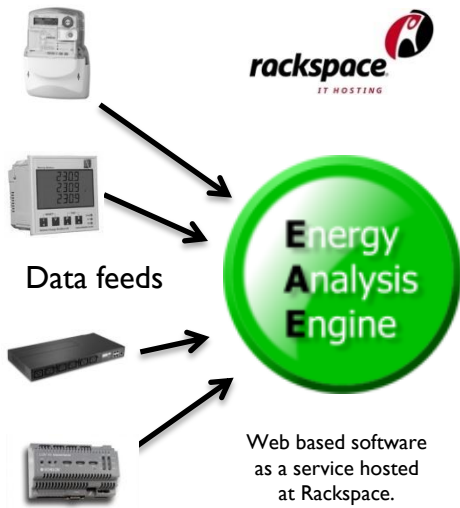
Solutions for CRC Compliance

Can you automate the compliance process?

- ❑ To buy the correct number of allowances in advance you must analyse and understand your current consumption
- ❑ Set energy targets for each of your departments, publish energy data in real time
- ❑ Implement systems to support allowance trading, develop trading experience
- ❑ ITM offer a fully managed web based service to analyse, forecast, support allowance trading and automate CRC reporting requirements

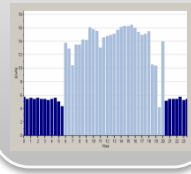


A typical implementation - Energy Analysis



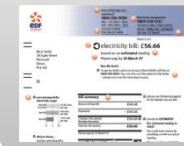
Monitoring

- Aggregate feeds
- View real-time



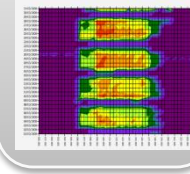
Pricing

- Apply cost contract
- Invoice validation
- Tenant billing



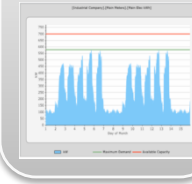
Analysis

- Visualise usage
- Allocate costs
- Email reports



Forecast

- Forecast usage
- Buy allowances



Export

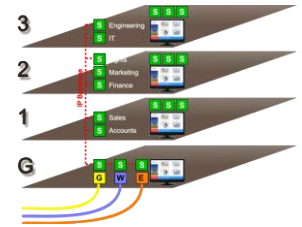
- Export data to external management systems



All accessed from any location using a standard web browser.

Can you save 5% every year?

- ❑ Energy reductions of 5% per year will be required. Track energy use with more granular monitoring.
- ❑ Install secondary metering to understand energy consumption in more detail
- ❑ Integrate data from existing sources into single reporting platform
- ❑ ITM supply and install networked metering systems and integrate data from existing equipment. Installers of The Green Grid PUE display systems.



A typical implementation - Data Collection

Half hourly fiscal meter



GSM



Data Collector



Email each night containing 48 data points.



Energy Analysis Engine Web Service

Half hourly secondary meter



IP



IP Backbone

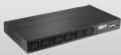


Email every half hour with data point.



Energy Analysis Engine Web Service

Rack Power Monitoring (e.g. Avocent PM2000)



IP



Data exported to file server.



Windows service exports data every half hour.



Energy Analysis Engine Web Service

Electrical Meters - UPS, CRAC, BMS



IP



IP gateway logs data from Modbus / LonWorks / M-Bus Devices. Sends data every half hour.



Energy Analysis Engine Web Service

A typical implementation – Export/Integrate

Export to Cisco DMS



Export data



Windows service converts data to graphics



Web Server serves HTML pages



Cisco DMS

Export to Cisco IPPS



Export data



Windows service converts data to graphics



Web Server serves XML pages



Export to CarbonDashboard



Export data



CarbonDashboard displays energy consumption in real time



Export to other services




Export data



Data can be exported via web services, file export, ftp, email. upstream integration to Rackwise, CA,HP,BMC etc)



Change your organisations attitude to energy

ITM  Communications

- ❑ Create a low carbon transition plan
- ❑ Develop an infrastructure to monitor energy consumption
- ❑ Display real time energy consumption with a CarbonDashboard
- ❑ Send weekly departmental energy reports
- ❑ Energy reduction will become a strategically important business process




- ❑ **Energy Analysis Engine**
web based SAAS model
- ❑ **Networked Metering**
IP based secondary metering
- ❑ **CarbonDashboard**
real time energy display
- ❑ **Energy Planning Tool**
forecast electrical loads





Any questions?

How to engage?

 We offer complete design, integration, installation, project management and support services structured into five key areas of capability;

- Structured Cabling & Connectivity
- Network Infrastructure & Security
- Networked Energy Management
- Data Centre Infrastructure
- Managed Services & Support

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