DEINOVE
The deinococcus way

Press release

ANNUAL RESULTS FOR THE FISCAL YEAR 2014

- **A key patent granted in the United States ensures a broader perspective**
- **4 industrial and scientific partnerships with structural impact were concluded during the 2014 fiscal year: Sofiprotéol (Avril) for Deinochem, Suez Environnement, Abengoa and MBI for Deinol**
- **Significant technological advances for the Company's two main programs**
    - **DEINOL for the production of second generation biofuels: 9% bioethanol production, confirmation of the *Deinococcus* performance in biomass degradation, extensive testing of lignocellulosic feedstocks**
    - **DEINOCHEM: promising launch - production of the first molecules from the isoprenoid pathway and in particular a wide range of high value-added carotenoids**
- **Annual net loss of €6.5m vs. €3.4m in 2013, the difference resulting to non-recurring items and the increase in operating expenses in line with R&D and pre-industrial progress. First revenues from the collaboration agreements**
- **Net financial position of +€2.2m at 31/12/14 (vs. +€3.1m at 31/12/13) significantly strengthened by cash inflows of €3.1m between 01/01/15 and 28/02/15, resulting in a net financial position of +€4.1[1]m at that date. Strong cash position secures financial needs for at least 18 months.**

Montpellier, March 31, 2015 - DEINOVE (Alternext Paris: ALDEI), a biotech company developing innovative processes for producing biofuels and bio-based chemicals by using *Deinococcus* bacteria as host strains, today announced that its Board of Directors has proceeded with the review and finalizing of the annual financial statements 2014. It also convened the General Meeting for May 6, 2015.

The net result for the year is a loss of €6.458k compared to a loss of €3.420k in 2013. This partly reflects the accelerated development of the Company during the fiscal year. Established since late 2013 in new laboratories in the heart of the Biopôle Euromédecine (science park in Montpellier), Deinove has increased its average FTE (full time equivalent) staffing level by 10 in 2014, and has invested €1.2m in new scientific equipment. A necessary acceleration that led to the signing of four cooperation agreements in 2014, as well as significant advances in its two major research programs. While DEINOVE is not yet generating significant revenues, this acceleration has resulted in a controlled increase of 29% in operating expenses, consequently generating a negative current loss of €7.1m. The net result is also impacted by exceptional costs linked to the capital increase project cancelled in early July 2014, and by an unfavourable comparison effect to the R&D Tax Credit (CIR).

The net cash flow position amounted to +€2.2m at 31/12/14. During the 1st quarter of 2015, the receipt of €3.4m strengthened this position (ADEME payment and equity line proceeds). The Company expects to be able to finance its activities to beyond the 3rd quarter of 2016.

"2014 has been a landmark year for DEINOVE. We are making further strides in the development of real 2nd generation technologies; our strength and distinguishing feature is that we work directly from pure raw vegetal material, a unique approach for a French SME. By breaking down this technological barrier, we will offer a new generation of industrial bioprocesses both efficient, cost effective and environmentally friendly", declares Emmanuel Petiot, CEO of DEINOVE. "The partnerships established in 2014 welcome our progress. We have started a new stage in our development, which has resulted

[1] Unaudited accounts

in a necessary and controlled increase in our operating expenses. We are investing decisively for the future. We anticipate new partnerships and new technological advances in 2015".

FINANCIAL STATEMENT ELEMENTS

(in thousands euros)	2014	2013
Total operating revenues	156	51
Total operating costs	7 216	5,574
o/w R&D costs	*5,477*	*3,945*
o/w G&A costs	*1,739*	*1,629*
Operating profit / loss	**-7,060**	**-5,523**
Financial result	-37	123
Current pre-tax profit / loss	**-7,097**	**-5,400**
Non-recurring items	-735	21
Income tax (R&D Tax Credit)	-1,374	-1,960
Profit / loss for the year	**-6,458**	**-3,420**
Net financial position	**2,216**	**3,088**
o/w Financial investments[1]	*0*	*1,276*
o/w Term deposits (maturity <1 year)	*0*	*0*
o/w Cash instruments (maturity <3 months)	*0*	*0*
o/w Cash on hand	*2,216*	*1,872*
(o/w Financial debts)	*0*	*-60*
Total assets	**6,953**	**6,961**
Total shareholders' equity	**4,745**	**5,658**
o/w Equity	*196*	*2,601*
o/w Conditional advances	*4,550*	*3,057*

[1] *Excluding elements of the liquidity contract (cash and treasury shares), and deposits & guarantees.*

RESULTS FOR THE FISCAL YEAR 2014

The 2014 net result is a net loss of €6.458k, compared to a net loss of € 3.420k over the previous year.

Operating income

Operating revenue totalling €156k for the year 2014, was mainly the result of invoicing related to collaborative research agreements with Suez Environnement and Sofiprotéol.

At the same time, operating expenses increased by +29% to €7.216k, directly linked to the ongoing development of R&D activities representing 76% of total expenditure. For their part general and administrative expenses have only increased by +7%.

The main noteworthy points are:

- An increase of +39% in R&D costs, resulting from the acceleration of research programs both internally as well as via outsourcing to private providers and public research bodies, notably VTT in Finland. This evolution in R&D costs is largely due to the launch of the second DEINOVE flagship project: DEINOCHEM.

- Increased investment in scientific equipment, following the October 2013 move and the acceleration of international prospecting efforts, particularly in the United States.
- For the Company it is mainly salaries and benefits (+€639k, or +27%) and external studies, subcontracting and scientific consultancy (+€711k, or +117%) as well as provisions for depreciation amounts (+€173k, or +47%), which explains the increase in operating expenses. Details of the fluctuations in the various expense items are provided in the financial report, notably in section 3.2.

Operating revenue

In terms of financial result, the negative change -€160k between 2013 and 2014 resulted primarily from net of transactions conducted under the liquidity contract at -€92k and the decrease in financial interest on cash investments remunerated at -€66k.

The loss of -€735k in exceptional result is mainly due to the recording in this section of €719k in costs related to the capital increase operation, cancellation of which was announced by the Company on 04/07/14.

Corporate income tax represents a profit of €1.374k in 2014, vs. €1.960k in 2013, i.e. a negative change of -€586k, primarily due to the CIR. At the end of 2013, DEINOVE had recorded proceeds receivable of €658k following two corrective requests sent to the tax administration and corresponding to CIR receivables for financial years 2010 and 2011. The Company having received a first payment of €381k in 2014, and otherwise adjusted to €77k the provision of the remaining proceeds receivable, the result is an accounting impact of -€200k, hence a variation of -€858k from one year to the other for these corrective requests. This variation is only partially offset by the increase of the CIR receivable for the financial year, DEINOVE estimates acquiring a receivable of €1.594k for 2014, vs. €1.313k accrued in 2013. The situation is relatively different in terms of amounts collected in cash, the respective amounts of CIR for 2013 and 2014 being +€932k and +€1.656k or an increase of €724k from one financial year to another.

FINANCIAL POSITION AS AT DECEMBER 31, 2014

The financial needs of the Company mainly concerned operational expenditure (€6.675k, excluding provisions for depreciation amounts) and investment in equipment (€1.237k). Over the same period, the Company received €1.656k from the tax authorities (CIR), €1.480k in the form of a repayable advance granted by the ADEME (the first payment on the DEINOCHEM program) and has raised a total of € 4.178k in capital (net expenses), including €3.635k through the PACEO® agreement (Société Générale) and €543k via the equity funding agreement set up with Kepler Cheuvreux.
At 31/12/14, the net financial position amounted to €2.216k vs. +€3.088k end 2013. At the date of this release and since the beginning of the 2015 financial year, the cash position has been significantly strengthened: the Company received €1.0m from the ADEME in February following the achievement of the first key milestone of the DEINOCHEM project, and a total of €2.4m through the Kepler Cheuvreux equity line.

Given these factors, the Company expects to be able to fund ongoing programs beyond the 3rd quarter of 2016.

KEY EVENTS

In 2014, DEINOVE has been actively working towards the industrialization of its processes.

Optimisation of the *Deinococcus* strains

Confirmation of the exceptional cellulolytic performance of *Deinococcus*

DEINOVE researchers have used genetic engineering to create strains capable of hydrolysing vegetable cellulose as rapidly as the benchmark microorganism *Trichoderma reesei*. This filamentous fungus is used to produce many commercial cellulases for industrial companies. The *Deinococcus* cellulolytic capabilites, combined with their natural xylanolytic properties, optimise the use of sugars from plant biomass and reduces the use of commercial enzymes, expensive additives in the production process, representing almost one third of the total cost. These properties are fundamental in the development of an all-in-one process, known as CBP (Consolidated BioProcessing). This simplification of the production steps also results in a reduction of the necessary equipment investment.

Validation of *Deinococcus* fermentation capabilities with 9% ethanol production

The optimisation of the selected strain for the DEINOL program was reflected at the beginning of the year by improved yield and productivity, and by attaining a 9% v/v (volume/volume) of ethanol from a model substrate (glucose) in a 20-litre instrumented fermenter. A world first for a bacterial process.

Since then successful tests have been carried out on a mixture of C6 and C5 sugars, in order to be closer to the biomass composition[2] and demonstrate the strict co-assimilation of these sugars, the unique ability of the *Deinococcus* bacteria and a major challenge for the industrial companies. An important work of adaptation of the strain is being conducted on various industrial substrates, including those of MBI, AFEX pre-treated corn stover on which the technology has been proven in preliminary tests.

New step in the automated construction of industrial strains

DEINOVE has completed an important step in developing its automated genetic engineering platform with the deployment of computer-aided design software, developed by CAD4Bio in close collaboration with the DEINOVE researchers. This software speeds up and streamlines assembly of genetic "building blocks" of interest before transferring them to a host strain. It reduces human intervention and standardizes them, delivering a cloning plan that is then carried out by a high-speed robot. This process of genetic engineering, on the cutting-edge of this field, enables a strain's genome to be optimized so that it can produce various molecules of interest with maximum efficiency.

DEINOL program for the production of biofuels from lignocellulosic biomass

Partnership with Abengoa, European leader in biofuels production

In the context of the DEINOL project, the Company signed in June 2014 a partnership agreement with the Spanish group Abengoa, European leader in ethanol production, equally established in Brazil and the United States, the world's two main ethanol producing countries. Abengoa operates 15 bioethanol production plants worldwide, including a 2nd generation biofuel factory, producing 3 billion litres per year. Abengoa is now replacing the Tereos group as industrial operator of the DEINOL project, as Bpifrance supported this change and confirmed its financial support for the project. In 2010, the DEINOL collaborative program obtained a funding commitment of 6 million Euros from Bpifrance for DEINOVE. The Company has already received 4.1 million Euros and successfully completed the first key steps.

[2] Lignocellulosic biomass (wood, straw, vegetal waste, etc.) contains cellulose (including C6 sugars, with 6 carbon atoms, such as glucose) and hemicellulose (C6 and C5 sugars).

The DEINOVE teams are now working on building strains adapted to the 2G substrates used by Abengoa (agricultural residues). The partners have been given up to three years to develop the process and achieve the required performance so that it can be implemented in real size plants.

Industrial partnership with Suez Environnement for the conversion of municipal solid waste into ethanol

DEINOVE has signed a collaborative R&D agreement with the Suez Environment group for the development of a circular economy. This two-year contract is the 1st step of a project aimed at exploring the potential for developing a new industrial sector for transforming urban organic waste into ethanol through the action of *Deinococcus* bacterium.

Following tests on different types of substrates from municipal waste prior to signing the contract, the DEINOVE teams are now working on optimising a process to enable their transformation into ethanol in optimal industrial and economic conditions. If successful, the companies expect to sign a license agreement for the operation of the DEINOL process.

Technological partnership with the Michigan Biotechnology Institute (MBI)

DEINOVE and MBI have initiated a partnership to qualify the DEINOL technology.

MBI is a renowned multidisciplinary centre in the bio-industries sector for its unique derisking[3] capabilities. It works on optimising innovative production technologies. MBI has contributed to the success of major industrial groups such as DuPont, Cargill (NatureWorks), Novozymes, and start-ups like Genomatica, OPX Biotechnologies and Verdezyne.

MBI is also known for the development with Michigan State University of an exclusive biomass pre-treatment technology called AFEX (Ammonia Fiber Expansion).

After testing its process on model substrates DEINOVE contacted MBI to test its technology on their industrial substrates: AFEX pre-treated corn stover. Preliminary tests produced remarkable results with the assimilation of all the sugars available in the biomass and the production of ethanol, demonstrating the effectiveness of the DEINOL technology on industrial biomass. The goal of this partnership is to accelerate the commercialisation of the DEINOL process by raising the technological challenges associated with it.

Continuation of tests on various industrial substrates and progress towards an industrial scale

The DEINOL technology offer is based on an all-in-one method of direct conversion of lignocellulosic raw material into ethanol: hydrolysis of the biomass into fermentable sugars and then conversion of these sugars into ethanol, a beneficial process in terms of cost and simplicity of implementation.

Initially, the Company sought to set the strain to different types of sugars in increasingly significant volumes. Through agreements with its new industrial partners, the teams have refocused their efforts on strain adaptation to real substrates provided by these partners.

Researchers working on the DEINOL program focus on what remains an industrial barrier in current developments, conducting various tests on raw materials provided by MBI, Abengoa (agricultural waste) or Suez Environnement (urban organic waste) and adapting their *Deinococcus* strain to different types of sugar composition and varying toxicity generated by industrial pre-treatment in accordance with the substrate.

The next step is to initiate a new series of medium and large capacity tests.

[3] A process that identifies and deals with the risks associated with scale-up and commercial launch of a technology breakthrough

DEINOCHEM program to produce chemical compounds from the isoprenoid family

Actual production of several key molecules

In 2014, the DEINOCHEM project gained momentum. DEINOVE researchers worked on optimizing a *Deinococcus* strain for the production of molecules derived from the isoprenoid pathway. Accordingly, in June 2014 they produced various molecules of industrial interest in a laboratory scale.

This performance was partly obtained by applying technology patented by Génoplante-Valor via INRA Transfert. Consequently, DEINOVE decided to exercise the option granted in November 2013 to acquire this exclusive license for improving isoprenoid biosynthetic pathways.

Bioproducts obtained through *Deinococcus* - aromatic ingredients, antioxidants, pigments - are high added-value compounds, finding application in cosmetics as well as in the food-processing industry. Others are intended to be used in perfumery and other everyday products. Some of these compounds may be marketed for up to several thousand euros per kilo, representing a potential market of several billion euros in revenue. To date, these molecules are essentially derived from petroleum or plant extracts, with low yield and high production costs.

These major advances in the DEINOCHEM program have led to the crossing of key milestone 1 in the beginning of 2015.

COLOR2B: August 2014 Start of a research partnership with Sofiprotéol, renamed Avril, for the development of a production process for natural feed additives

Co-financed by DEINOVE and Avril, COLOR2B is a 3-year R&D project expected to develop a process for producing natural additives for animal feed. It includes the selection of best-performing bacteria strains from DEINOVE's bacteria strain bank, testing the compounds produced, qualifying their benefits for animal nutrition and health as well as developing the production process at pilot-scale.

- DEINOVE expertise will focus on producing additives from their bacterial micro-factories, in an eco-friendly and economically viable way.
- Avril's expertise will apply to feedstock selection, evaluation of the beneficial effects for animals, knowledge of the market and associated regulations, as well as marketing the technology developed.

Ultimately, the two partners strive to industrialize the bioproduction of such additives and launch new animal nutrition product lines. Targeted applications in human food will also be considered.

Corporate Information

Evolution of capital

At the closing of the 2013 financial year the Company announced that it had financial resources to fund its activities until mid-2015, it has therefore undertaken several actions to strengthen its financing and extend its cash perspective.

In October 2013, DEINOVE set up an equity financing solution PACEO® designed by the Société Générale. This equity line was discontinued in late November 2014, during the development of the equity financing solution with Kepler Cheuvreux (see below).

On 24 June 2014, DEINOVE launched a capital increase of maximum €25 million without preferential subscription rights and with a priority period for existing shareholders. July 4, 2014, the Company announced the cancellation of the capital increase; the expected conditions for its implementation were not met.

December 1, 2014, DEINOVE announced the establishment of medium-term equity line funding with the company Kepler Cheuvreux. This financing solution brings DEINOVE the guarantee of raising up to €15 million, divided into four tranches, over a flexible duration of 3 years maximum. The start of

the first tranche (amounting to 3.5 million Euros) took place simultaneously with the signing of the contract. DEINOVE maintains the right not to issue all the tranches and/or implement other financing transactions.

The increase in the total number of shares related to this equity financing solution mechanically reduces Truffle Capital participation, who reported to the AMF (Financial Markets Authority) on February 28, 2015, that it had fallen below the threshold of 50% of the DEINOVE share capital and holds 48.27% of the capital and 64.03% voting rights of the Company.

Evolution of governance

The General Assembly on 6 May 2014 approved the nomination, as independent administrators, of two high-profile leaders in DEINOVE's industrial environment:

- Dennis McGrew, former CEO of NatureWorks, American bioplastics manufacturer;
- Michael Carlos, President of Givaudan Fragrances, world leader of fragrances and flavours.

During its meeting of 17 September 2014, the Board of Directors took note of the departure of the University of Paris V Descartes, represented by its Director Frédéric Dardel and Bruno Weymuller.

Delivery of 6 new patents

Despite the significant budget required for intellectual property, it is indispensable for sustaining the company and is a major differentiator.

To date, DEINOVE holds 18 domestic patents, over 180 international applications. During the financial year of 2014, DEINOVE broadened its intellectual property portfolio, notably with 6 new patents issued:

- The Patent "Use of bacteria for the production of bioenergy" (already issued in Europe in June 2013) was issued in Eurasia and Australia;
- The patent "Recombinant bacteria and the uses thereof for producing ethanol" was issued in the Ukraine;
- The patents "Enzymes and uses thereof" and "Laccases and uses thereof", focusing on enzymes involved in cellulosic biomass digestion, were issued in South Africa;
- The patent "Compositions and methods for degrading lignocellulosic biomass" was issued in China.

Early 2015, DEINOVE also announced that it has been granted a patent for its "High-performance metabolic bacteria" in the United States.

About DEINOVE

DEINOVE (Alternext Paris: ALDEI) is ushering in a new era of green chemistry by designing and developing new standards of production based on bacteria of untapped potential: the Deinococci. Taking advantage of the bacteria's unique genetic properties and unusual robustness, DEINOVE optimizes natural fermentation and metabolic capabilities of these bacterial "micro-factories" to produce high value-added products from non-food biomass. The Company's primary markets are 2nd-generation biofuels (DEINOL) and bio-based chemicals (DEINOCHEM). On these markets, the Company offers its technology to industrial partners globally.
Listed on NYSE Alternext since April 2010, DEINOVE was founded by Dr. Philippe Pouletty, General Partner of TRUFFLE CAPITAL, and Pr. Miroslav Radman, of the Faculty of Medicine of Paris Descartes University. The company employs over 40 people in its new offices and laboratories located in Montpellier, France.
More information at www.deinove.com

CONTACTS
DEINOVE

Emmanuel Petiot
CEO
Tel.: +33 (0) 4 48 19 01 28
emmanuel.petiot@deinove.com

Julien Coste
CFO
Tel.: +33 (0) 4 48 19 01 00
julien.coste@deinove.com

Coralie Martin
Communication, Marketing and IR Manager
Tel.: +33 (0) 4 48 19 01 60
coralie.martin@deinove.com

ALIZE RP, Press Relations
Caroline Carmagnol
Mobile: +33 (0) 6 64 18 99 59
deinove@alizerp.com

ALDEI LISTED NYSE ALTERNEXT